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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

FLORIDA POWER CORPORATION
CITY OF ALACHUA
CITY OF BUSHNELL
CITY OF GAINESVILLE
CITY OF KISSIMMEE
CITY OF LEESBURG
CITY OF NEW SMYRNA BEACH AND UTILITIES COMMISSION, CITY OF NEW SMYRNA BEACH
CITY OF OCALA
ORLANDO UTILITIES COMMISSION AND CITY OF ORLANDO
SEMINOLE ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-302

CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 2
License No. DPR-72

1. The Nuclear Regulatory Commission (the Commission) having found that:

   A. The application filed by Florida Power Corporation, City of Alachua, City of Bushnell, City of Gainesville, City of Kissimmee, City of Leesburg, City of New Smyrna Beach and Utilities Commission, City of New Smyrna Beach, City of Ocala, Orlando Utilities Commission and City of Orlando, Sebring Utilities Commission*, Seminole Electric Cooperative, Inc., and City of Tallahassee** (the licensees) as supplemented by letter dated December 9, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter 1;

   B. Construction of the Crystal River Unit 3 Nuclear Generating Plant (facility) has been substantially completed in conformity with Provisional Construction Permit No. CPPR-51 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;

   C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

*As of the effective date of Amendment No. 140 , Sebring Utilities Commission is no longer a licensee under this license.

**As of the effective date of Amendment No. 189, the City of Tallahassee is no longer a licensee under this license.

AMENDMENT NO. 189
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D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;

E. The licensees are financially qualified and the Florida Power Corporation is technically qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission;

F. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

G. The issuance of this operating license will not be inimical to the common defense and security or to the health and safety of the public;

H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Facility Operating License No. DPR-72 subject to the conditions for protection of the environment set forth herein is in accordance with 10 CFR Part 51. (formerly Appendix D to 10 CFR Part 50), of the Commission's regulations and all applicable requirements have been satisfied;

I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Part 30, 40 and 70, including 10 CFR Sections 30.33, 40.32 and 70.23 and 70.31.

2. Facility Operating License No. DPR-72, issued to the licensees, is hereby amended in its entirety to read as follows:

   A. This amended license applies to the Crystal River Unit 3 Nuclear Generating Plant, a pressurized water nuclear reactor and associated equipment (the facility), owned by the licensees and operated by the Florida Power Corporation. The facility is located on the Gulf of Mexico, about seven and one-half miles northwest of the town of Crystal River, Citrus County, Florida, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendment 11 through 50) and the. Environmental Report as supplemented and amended (Amendments 1 through 3).

Revised page submitted 2-24-77

B Subject to the conditions and requirements incorporated herein, the Commision hereby licenses:

(1) Florida Power Corporation, pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use and operate the facility;

(2) The licensees to possess the facility at the designated location in Citrus County, Florida, in accordance with the procedures and limitations set forth in this license;

(3) Florida Power Corporation, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

(4) Florida Power Corporation, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(5) Florida Power Corporation, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;

(6) Florida Power Corporation, pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

2.B.(7) Florida Power Company, pursuant to the Act and 10 CFR Parts 30 and 70, to receive and possess, but not separate, that by-product and special nuclear materials associated with four (4) fuel assemblies (B&W Identification Numbers 1A-01, 04, 05 and 36 which were previously irradiated in the Oconee Nuclear Station, Unit No. 1) acquired by Florida Power Corporation from Duke Power Company for use as reactor fuel in the facility.

Added Per Amdt. 15, 7-24-78

C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Section 50.54 and 50.59 of part 50, Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

2.C.(1) Maximum Power Level

Florida Power Corporation is authorized to operate the facility at a steady state reactor core power level not in excess of 2609 Megawatts (100 percent of rated core power level).

2.C.(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 242, are hereby incorporated in the license. Florida Power Corporation shall operate the facility in accordance with the Technical Specifications.

The Surveillance Requirements contained in the Appendix A Technical Specifications and listed below are not required to be performed immediately upon implementation of Amendment 149. The Surveillance Requirements shall be successfully demonstrated prior to the time and condition specified below for each.

a) SR 3.3.8.2.b shall be successfully demonstrated prior to entering MODE 4 on the first plant start-up following Refuel Outage 9.

b) SR 3.3.11.2, Function 2, shall be successfully demonstrated no later than 31 days following the implementation date of the ITS.

c) SR 3.3.17.1, Functions 1, 2, 6, 10, 14, & 17 shall be successfully demonstrated no later than 31 days following the implementation date of the ITS.

d) SR 3.3.17.2, Function 10 shall be successfully demonstrated prior to entering MODE 3 on the first plant start-up following Refuel Outage 9.

e) SR 3.6.1.2 shall be successfully demonstrated prior to entering MODE 2 on the first plant start-up following Refuel Outage 9.

f) SR 3.7.12.2 shall be successfully demonstrated prior to entering MODE 2 on the first plant start-up following Refuel Outage 9.

g) SR 3.8.1.10 shall be successfully demonstrated prior to entering MODE 2 on the first plant start-up following Refuel Outage 9.

h) SR 3.8.3.3 shall be successfully demonstrated prior to entering MODE 4 on the first plant start-up following Refuel Outage 9.

i) SR 3.8.4.5 shall be successfully demonstrated prior to entering MODE 4 on the first plant start-up following Refuel Outage 9.

j) SR 3.8.7.1 shall be successfully demonstrated no later than 7 days following the implementation date of the ITS.

k) SR 3.8.8.1 shall be successfully demonstrated no later than 7 days following the implementation date of the ITS.

2.C.(3) Florida Power Corporation shall not operate the reactor in operational Modes 1 and 2 with less than three reactor coolant pumps in operation until safety analyses for less than three pump operation have been submitted by the licensees and approval has been granted by the Commission by amendment to this license.

2.C.(4) DELETED per Amendment No. 20 dated 7-3-79.

2.C.(5) Within six months of the date of issuance of this license, Florida Power Corporation shall complete modifications to the level indication of the borated water storage tank, and installation of dual setpoint pilot-operated relief valve on the pressurizer.

2.C.(6) Deleted per Amendment No. 21, 7-3-79

2.C.(7) Prior to startup following the first regularly scheduled refueling outage, Florida Power Corporation shall modify to the satisfaction of the Commission, the reactor coolant system flow indication to meet the single failure criterion with regard to pressure sensing lines to the flow differential pressure transmitters.

2.C.(8) Within three months of issuance of this license, Florida Power Corporation shall submit to the Commission a proposed surveillance program for monitoring the containment for the purpose of determining any future delamination of the dome.

2.C.(9) Fire Protection

Florida Power Corporation shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility and as approved in the Safety Evaluation Reports, dated July 27, 1979, January 22, 1981, January 6, 1983, July 18, 1985, and March 16, 1988, subject to the following provisions:

> The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. *{Amdt. #147, 1-22-93}*

2.C.(10) The design of the reactor coolant pump supports need not include consideration of the effects of postulated ruptures of the primary reactor coolant loop piping and may be revised in accordance with Florida Power Corporation's amendment request of April 24, 1986. *{Added per Amdt. #89, 5-23-86}*

2.C.(11) A system of thermocouples added to the decay heat (DH) drop and Auxiliary Pressurizer Spray (APS) lines, capable of detecting flow initiation, shall be operable for Modes 4 through 1. Channel checks of the thermocouples shall be performed on a monthly basis to demonstrate operability. If either the DH or APS system thermocouples become inoperable, operability shall be restored within 30 days or the NRC shall be informed, in a Special Report within the following fourteen (14) days, of the inoperability and the plans to restore operability. *{Amdt. #164, 1-27-98}*

2.C.(12) Deleted per Amendment No.

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2.C.(14) Mitigation Strategy License Condition

The licensee shall develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(1.) Fire fighting responses strategy with the following elements:
- a. Pre-defined coordinated fire response strategy and guidance
- b. Assessment of mutual aid fire fighting assets
- c. Designated staging areas for equipment and materials
- d. Command and control
- e. Training of response personnel

(2.) Operations to mitigate fuel damager considering the following:
- a. Protection and use of personnel assets
- b. Communications
- c. Minimizing fire spread
- d. Procedures for implementing integrated fire response strategy
- e. Identification of readily-available pre-staged equipment
- f. Training on integrated fire response strategy
- g. Spent fuel pool mitigation measures

(3.) Actions to minimize release to include consideration of:
- a. Water spray scrubbing
- b. Dose to onsite responders

2.C.(15) Upon implementation of Amendment No230 adopting TSTF-448, Revision 3, the determination of control complex habitability envelope (CCHE) unfiltered air inleakage as required by Surveillance Requirement (SR) 3.7.12.4, in accordance with ITS 5.6.2.21.3(i) and the assessment of CCHE habitability as required by ITS 5.6.2.21.3(ii), shall be considered met. Following implementation:

a) The first performance of SR 3.7.12.4, in accordance with Specification 5.6.2.21.3(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from May 18, 2007, the date of the most recent successful inleakage test.

b) The first performance of the periodic assessment of CCHE habitability, ITS 5.6.2.21.3(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from May 18, 2007, the date of the most recent successful inleakage test.

c) The Control Complex Habitability Envelope Integrity Program will be used to verify the integrity of the Control Complex boundary. Conditions that are identified to be adverse shall be trended and used as part of the 24 month assessment of the CCHE boundary. This assessment will be performed within 60 days of implementation of Amendment .

2.D Physical and Cyber Security

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 2781.7 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Physical Security Plan, Revision 5," and "Safeguards Contingency Plan, Revision 4," submitted by letter dated May 16, 2006, and "Guard Training and Qualification Plan, Revision 0," submitted by letter dated September 30, 2004, as supplemented by letters dated October 20, 2004, and September 29, 2005.

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 238.

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E. This license is subject to the following antitrust conditions and applies only to the Florida Power Corporation (FPC):

(1) FPC will interconnect with and coordinate reserves by means of the sale and exchange of emergency bulk power with any entity or entities in its service area* engaging in or proposing to engage in electric bulk power supply on terms that will provide for FPC cost (including a reasonable return) in connection therewith and allow the other participant(s) full access to the benefits of reserve coordination.

Explanatory Notes:**

(a) Interconnections will not be limited to low voltages when higher voltages are available from FPC installed facilities in the area where interconnection is desired, when the proposed arrangement is found to be technically and economically feasible.

(b) Emergency service agreements will not be limited to a fixed amount, but emergency service provided under such agreements will be furnised to the fullest extent available and desired where such supply does not impair service to the supplier's customers.

(c) An example of the type of reserve sharing arrangement available to any participant and which would provide "full access to the benefits of reserve coordination" would be one in which the following conditions would obtain:

(1) FPC and each participant(s) shall provide to the other emergency power if and when available from its own generation, or through its transmission from the generation of others to the extent it can do so without disrupting service to its own customers.

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* The use of the term "service area" in no way indicates an assignment or allocation of wholesale market areas. It is intended only as a general indication of an area within the State of Florida where FPC provides some class of electric service.

**In order to clarify the commitments, certain explanatory notes have been added where necessary.

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(2) The participant(s) to the reserve sharing arrangement shall, jointly with FPC establish from time to time the minimum reserves to be installed and/or purchased as necessary to maintain in total an adequate reliability of power supply on the interconnected system of FPC and participant(s). The reserve responsibility thus determined shall be calculated as a percentage of peak load. No participant(s) to the interconnection shall be required to maintain more than such percentage as a percentage of its peak load; provided that if the reserve requirements of FPC are increased over and above the amount FPC would be required to maintain without such interconnection then the other participant(s) shall be required to carry or provide for as its reserve responsibility the full amount in kilowatts of such increase. Under no circumstances will minimum spinning or operating reserve requirements exceed the installed reserve requirement.

(d) Interconnection and coordination agreements will satisfy this condition if they do not embody restrictive provisions pertaining to inter-system coordination. Industry practice as developed in this area from time to time will satisfy this condition if it is non-restrictive.

(2) FPC will purchase from or sell "bulk power" to any other entity or entities in the aforesaid area engaging in or proposing to engage in the generation of electric power in bulk, at its cost (including a reasonable return) when such transactions would serve to reduce the overall costs of new bulk power sypply for itself or the other participant or participants to the transaction. This refers specifically to the opportunity to coordinate in the planning of new generation, transmission and associated facilities.

Explanatory Notes:

(a) It is not to be considered that this condition requires FPC to purchase or sell bulk power if it finds such purchase or sale unfeasible or its costs in connection with such purchase or sale would exceed its benefits therefrom.

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(b) If FPC engages in coordinated development of its bulk power supply system with that of any other bulk power supply system, by selling unit power at the cost of its new power supply, or engages in joint ventures with the same result, FPC shall not refuse proportional participation on a comparable basis from the same unit to any other entity in its service area (see Commitment I, supra) engaging in or proposing to engage in bulk power supply to the extent it is technically feasibly to provide such unit power from the unit or units in question.

(3) FPC will facilitate the exchange of bulk power by transmission over its system between or among two or more entities with which it is interconnected on terms which will fully compensate it for the use of its system to the extent that subject arrangements reasonably can be accommodated from a functional and technical standpoint.

Explanatory Notes:

(a) This condition applies to entities with which FPC may be interconnected in the future as well as those to which it is now interconnected.

(b) FPC is obligated under this condition to transmit bulk power for other entities on the terms stated above, and to include in its planning and construction programs sufficient transmission capacity as required therefor, provided that such other entities give FPC sufficient advance notice as may be required to accommodate the arrangement from a functional and technical standpoint and that the other entities will be obligated to compensate FPC fully for the use of its system.

(4) FPC will sell power in bulk to any entity in the aforesaid area now engaging in or proposing to engage in the retail distribution of electric power.

(5) It is recognized that the foregoing conditions are to be implemented in a manner consistent with the provisions of the Federal Power Act and all rates, charges or practices in connection therewith are to be subject to the approval of regulatory agencies having jurisdiction over them.

F. In accordance with the requirement imposed by the October 8, 1976, order of the United States Court Appeals for the District of Columbia Circuit in Natural Resources Defense Council v. Nuclear Regulatory Commission, No. 74-1385 and 74-1586, that the Nuclear Regulatory Commission "shall make any licenses granted between July 21, 1976 and such time when the mandate is issued subject to the outcome of the proceedings herein," the license issued herein shall be subject to the outcome of such proceedings.

G. This amended license is effective as of the date of issuance. Facility Operating License No. DPR-72, as amended, shall expire at midnight, December 3, 2016.

Amdt. # 97, MAR 3 1 1987

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by

Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Attachments:
Changes to Technical
Specifications, Appendix A

Date of Issuance: JAN 2 8 1977

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Transmitted with Original License dtd. 12-3-76

Crystal River Unit 3 Nuclear Generating Plant

Technical Specifications

Appendix "A"

to

License No. DPR-72

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CRYSTAL RIVER NUCLEAR GENERATING PLANT UNIT 3 TECHNICAL SPECIFICATIONS

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APPENDIX "A" TO LICENSE NO. DPR - 72

DECEMBER 3, 1976

ISSUED BY THE UNITED STATES NUCLEAR REGULATORY COMMISSION

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1.0 USE AND APPLICATION

1.1 Definitions

-----------------------------------NOTE-----------------------------------
The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ALLOWABLE THERMAL POWER	ALLOWABLE THERMAL POWER shall be the maximum reactor core heat transfer rate to the reactor coolant permitted by consideration of the number and configuration of reactor coolant pumps (RCPs) in operation.
AXIAL POWER IMBALANCE	AXIAL POWER IMBALANCE shall be the power in the top half of the core expressed as a percentage of RATED THERMAL POWER (RTP) minus the power in the bottom half of the core expressed as a percentage of RTP.
AXIAL POWER SHAPING RODS (APSRs)	APSRs shall be the part length control components used to control the axial power distribution of the reactor core. The APSRs are positioned manually by the operator and are not trippable.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel, including the required sensor, alarm, display, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. Whenever a sensing element is replaced, the next required inplace assessment consists of comparing

(continued)

1.1 Definitions

CHANNEL CALIBRATION (continued)

the other sensing elements with the recently installed sensing element. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is calibrated.

The CHANNEL CALIBRATION shall also include testing of safety related Reactor Protection System (RPS), Engineered Safeguards Actuation System (ESAS), and Emergency Feedwater Initiation and Control (EFIC) bypass functions for each channel affected by the bypass operation.

CHANNEL CHECK

A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be:

a. Analog channels—the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarms, interlocks, display, and trip functions.

b. Bistable channels (e.g., pressure switches and switch contacts)—the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarm and trip functions.

c. The ESAS CHANNEL FUNCTIONAL TEST shall also include testing of ESAS safety related bypass functions for each channel affected by bypass operation.

(continued)

1.1 Definitions (continued)

CONTROL RODS	CONTROL RODS shall be all full length safety and regulating rods that are used to shut down the reactor and control power level during maneuvering operations.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or other reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.2.18. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in International Committee on Radiation Protection (ICRP) 30, Supplement to Part 1, page 192-212, Table titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity."
$\bar{E}$—AVERAGE DISINTEGRATION ENERGY	$\bar{E}$ shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives > 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.
EFFECTIVE FULL POWER DAY (EFPD)	EFPD shall be the ratio of the number of hours of production of a given THERMAL POWER to 24 hours, multiplied by the ratio of the given THERMAL POWER to the RTP. One EFPD is equivalent to the thermal energy produced by operating the

(continued)

1.1 Definitions

EFFECTIVE FULL POWER DAY (EFPD) (continued)	reactor core at RTP for one full day. (One EFPD is 2609 MWt times 24 hours or 62616 MWhr.)
EMERGENCY FEEDWATER INITIATION AND CONTROL (EFIC) RESPONSE TIME	The EFIC RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its EFIC actuation setpoint at the channel sensor until the emergency feedwater equipment is capable of performing its safety function (i.e., valves travel to their required positions, pump discharge pressures reach their required values, etc.) Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME	The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

LEAKAGE

LEAKAGE shall be:

a. <u>Identified LEAKAGE</u>

1. LEAKAGE, such as that from pump seals or valve packing, that is captured and conducted to collection systems or a sump or collecting tank; or

2. LEAKAGE into the containment atmosphere from sources that are both specifically located and quantified and known not to interfere with the operation of leakage detection systems and not to be pressure boundary LEAKAGE; or

(continued)

1.1 Definitions

LEAKAGE (continued)	3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the secondary system (primary to secondary LEAKAGE).
	b. <u>Unidentified LEAKAGE</u> All LEAKAGE that is not identified LEAKAGE.
	c. <u>Pressure Boundary LEAKAGE</u> LEAKAGE (except primary to secondary LEAKAGE) through a non-isolable fault in an RCS component body, pipe wall, or vessel wall.
MODE	A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1.
NUCLEAR HEAT FLUX HOT CHANNEL FACTOR ($F_Q(Z)$)	$F_Q(Z)$ shall be the maximum local linear power density in the core divided by the core average fuel rod linear power density, assuming nominal fuel pellet and fuel rod dimensions.
NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR ($F^N_{\Delta H}$)	$F^N_{\Delta H}$ shall be the ratio of the integral of linear power along the fuel rod on which minimum departure from nucleate boiling ratio occurs to the average fuel rod power.
OPERABLE-OPERABILITY	A system, subsystem, train, component, or device shall be OPERABLE when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PHYSICS TESTS	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation.

(continued)

1.1 Definitions

PHYSICS TESTS (continued)

These tests are:

a. Described in Chapter 13, "Initial Tests and Operation" of the FSAR;

b. Authorized under the provisions of 10 CFR 50.59; or

c. Otherwise approved by the Nuclear Regulatory Commission.

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.2.19. Plant operation within these operating limits is addressed in LCO 3.4.3, "RCS Pressure and Temperature Limits."

QUADRANT POWER TILT (QPT)

QPT shall be defined by the following equation and is expressed as a percentage.

$$QPT = 100\left(\frac{\text{Power In Any Core Quadrant}}{\text{Average Power of all Quadrants}} - 1\right)$$

RATED THERMAL POWER (RTP)

RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2609 MWt.

REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME

The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until electrical power is interrupted at the control rod drive trip breakers. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

SHUTDOWN MARGIN (SDM)

SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or

(continued)

1.1 Definitions

SHUTDOWN MARGIN (SDM) (continued)	would be subcritical from its present condition assuming: a. All CONTROL RODS (safety and regulating) are fully inserted except for the single CONTROL ROD of highest reactivity worth, which is assumed to be fully withdrawn; and b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the post-trip RCS average temperature. With any CONTROL RODS not capable of being fully inserted, the reactivity worth of these CONTROL RODS must be accounted for in the determination of SDM.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

Table 1.1-1 (page 1 of 1)
MODES[a]

MODE	TITLE	REACTIVITY CONDITION (K_{eff})	% RATED THERMAL POWER[b]	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	≥ 0.99	> 5	NA
2	Startup	≥ 0.99	≤ 5	NA
3	Hot Standby	< 0.99	NA	≥ 280
4	Hot Shutdown[c]	< 0.99	NA	$280 > T_{avg} > 200$
5	Cold Shutdown[c]	< 0.99	NA	≤ 200
6	Refueling[d]	NA	NA	NA

(a) With fuel in the reactor vessel.

(b) Excluding decay heat.

(c) All reactor vessel head closure bolts fully tensioned.

(d) One or more reactor vessel head closure bolts less than fully tensioned.

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE

The purpose of this section is to explain the meaning of logical connectors.

Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.

BACKGROUND

Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentions of the logical connectors.

When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.

(continued)

1.2 Logical Connectors (continued)

EXAMPLES

The following examples illustrate the use of logical connectors.

EXAMPLE 1.2-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Verify . . . AND A.2 Restore . . .	

In this example the logical connector AND is used to indicate that both Required Actions A.1 and A.2 must be completed when in Condition A.

(continued)

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Trip . . . OR A.2.1 Verify . . . AND A.2.2.1 Reduce . . . OR A.2.2.2 Perform . . . OR A.3 Align . . .	

This example represents a more complicated use of logical connectors. Required Actions A.1, A.2, and A.3 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Any one of these three Actions may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND. Required Action A.2.2 is met by performing either A.2.2.1 or A.2.2.2. The indented position of the logical connector OR indicates that A.2.2.1 and A.2.2.2 are alternative choices, only one of which must be performed.

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE	The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.
BACKGROUND	Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the unit. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).
DESCRIPTION	The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the Specification. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the Specification Applicability. If situations are discovered that require entry into more than one Condition at a time within a single Specification (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the time of discovery of the situation that required entry into the Condition. Once a Condition has been entered, subsequent trains, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will <u>not</u> result in separate entry into the Condition, unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition.

(continued)

1.3 Completion Times

DESCRIPTION (continued)

However, when a subsequent train, subsystem, component, or variable, expressed in the Condition, is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. To apply this Completion Time extension two criteria must first be met. The subsequent inoperability:

a. Must exist concurrent with the first inoperability; and

b. Must remain inoperable or not within limits after the first inoperability is resolved.

The total Completion Time allowed for completing a Required Action to address the subsequent inoperability shall be limited to the more restrictive of either:

a. The stated Completion Time, as measured from the initial entry into the Condition, plus an additional 24 hours; or

b. The stated Completion Time as measured from discovery of the subsequent inoperability.

The above Completion Time extensions do not apply to those Specifications that have exceptions that allow completely separate re-entry into the Condition (for each train, subsystem, component or variable expressed in the Condition) and separate tracking of Completion Times based on this re-entry. These exceptions are stated in individual Specifications.

The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Action versus the time of Condition entry) or as a time modified by the phrase "from discovery . . ." Example 1.3-3 illustrates one use of this type of Completion Time. The 10-day Completion Time specified for Condition A and B in Example 1.3-3 may not be extended.

(continued)

1.3 Completion Times

DESCRIPTION (continued)

However, when a subsequent train, subsystem, component, or variable, expressed in the Condition, is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. To apply this Completion Time extension two criteria must first be met. The subsequent inoperability:

a. Must exist concurrent with the first inoperability; and

b. Must remain inoperable or not within limits after the first inoperability is resolved.

The total Completion Time allowed for completing a Required Action to address the subsequent inoperability shall be limited to the more restrictive of either:

a. The stated Completion Time, as measured from the initial entry into the Condition, plus an additional 24 hours; or

b. The stated Completion Time as measured from discovery of the subsequent inoperability.

The above Completion Time extensions do not apply to those Specifications that have exceptions that allow completely separate re-entry into the Condition (for each train, subsystem, component or variable expressed in the Condition) and separate tracking of Completion Times based on this re-entry. These exceptions are stated in individual Specifications.

The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Action versus the time of Condition entry) or as a time modified by the phrase "from discovery . . ."

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pump inoperable.	A.1 Restore pump to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

When a pump is declared inoperable, Condition A is entered. If the pump is not restored to OPERABLE status within 7 days, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable pump is restored to OPERABLE status after Condition B is entered, Condition A and B are exited, and therefore, the Required Actions of Condition B may be terminated.

When a second pump is declared inoperable while the first pump is still inoperable, Condition A is not re-entered for the second pump. LCO 3.0.3 is entered, since the ACTIONS do not include a Condition for more than one inoperable pump. The Completion Time clock for Condition A does not stop after LCO 3.0.3 is entered, but continues to be tracked from the time Condition A was initially entered.

While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has not expired, LCO 3.0.3 may be exited and operation continued in accordance with Condition A.

While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has expired, LCO 3.0.3 may be exited and

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-2 (continued)

operation continued in accordance with Condition B. The Completion Time for Condition B is tracked from the time the Condition A Completion Time expired.

On restoring one of the pumps to OPERABLE status the Condition A Completion Time is not reset, but continues from the time the first pump was declared inoperable. This Completion Time may be extended if the pump restored to OPERABLE status was the first inoperable pump. A 24 hour extension to the stated 7 days is allowed, provided this does not result in the second pump being inoperable for > 7 days.

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function X train inoperable.	A.1 Restore Function X train to OPERABLE status.	7 days
B. One Function Y train inoperable.	B.1 Restore Function Y train to OPERABLE status.	72 hours
C. One Function X train inoperable. AND One Function Y train inoperable.	C.1 Restore Function X train to OPERABLE status. OR C.2 Restore Function Y train to OPERABLE status.	72 hours 72 hours

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-3 (continued)

When one Function X train and one Function Y train are inoperable, Condition A and Condition B are concurrently applicable. The Completion Times for Condition A and Condition B are tracked separately for each train starting from the time each train was declared inoperable and the Condition was entered. A separate Completion Time is established for Condition C and tracked from the time the second train was declared inoperable (i.e., the time the situation described in Condition C was discovered).

If Required Action C.2 is completed within the specified Completion Time, Conditions B and C are exited. If the Completion Time for Required Action A.1 has not expired, operation may continue in accordance with Condition A. The remaining Completion Time in Condition A is measured from the time the affected train was declared inoperable (i.e., initial entry into Condition A).

It is possible to alternate between Condition A, B, and C in such a manner that operation could continue indefinitely without ever restoring systems to meet the LCO. However, doing so would be inconsistent with the basis of the Completion Times. Therefore, there shall be administrative controls to limit the maximum time allowed for any combination of Conditions that result in a single contiguous occurrence of failing to meet the LCO. These administrative controls shall ensure that the Completion Times for those Conditions are not inappropriately extended.

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

A single Completion Time is used for any number of valves inoperable at the same time. The Completion Time associated with Condition A is based on the initial entry into Condition A and is not tracked on a per valve basis. Declaring subsequent valves inoperable, while Condition A is still in effect, does not trigger the tracking of separate Completion Times.

Once one of the valves has been restored to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first valve was declared inoperable. The Completion Time may be extended if the valve restored to OPERABLE status was the first inoperable valve. The Condition A Completion Time may be extended for up to 4 hours provided this does not result in any subsequent valve being inoperable for > 4 hours.

If the Completion Time of 4 hours (including the extension) expires while one or more valves are still inoperable, Condition B is entered.

(continued)

1.3 Completion Times

EXAMPLE (continued)

EXAMPLE 1.3-5

ACTIONS

----------------------------NOTE----------------------------
Separate Condition entry is allowed for each inoperable valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

The Note above the ACTIONS table is a method of modifying how the Completion Time is tracked. If this method of modifying how the Completion Time is tracked was applicable only to a specific Condition, the Note would appear in that Condition, rather than at the top of the ACTIONS Table.

The Note allows Condition A to be entered separately for each inoperable valve, and Completion Times tracked on a per valve basis. When a valve is declared inoperable, Condition A is entered and its Completion Time starts. If subsequent valves are declared inoperable, Condition A is entered for each valve and separate Completion Times start and are tracked for each valve.

If the Completion Time associated with a valve in Condition A expires, Condition B is entered for that valve. If the Completion Times associated with subsequent valves in

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-5 (continued)

Condition A expire, Condition B is entered separately for each valve and separate Completion Times start and are tracked for each valve. If a valve that caused entry into Condition B is restored to OPERABLE status, Condition B is exited for that valve.

Since the Note in this example allows multiple Condition entry and tracking of separate Completion Times, Completion Time extensions do not apply.

EXAMPLE 1.3-6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Perform SR 3.x.x.x. OR A.2 Reduce THERMAL POWER to ≤ 50% RTP.	Once per 8 hours 8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

Entry into Condition A offers a choice between Required Action A.1 or A.2. Required Action A.1 has a "once per" Completion Time, which qualifies for the 25% extension, per SR 3.0.2, to each performance after the initial performance. If Required Action A.1 is followed and the Required Action

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-6 (continued)

is not met within the Completion Time (including the 25% extension allowed by SR 3.0.2), Condition B is entered. If Required Action A.2 is followed and the Completion Time of 8 hours is not met, Condition B is entered.

If after entry into Condition B, Required Action A.1 or A.2 is met, Condition B is exited and operation may then continue in Condition A.

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated.	1 hour AND Once per 8 hours thereafter
	AND	
	A.2 Restore subsystem to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-7 (continued)

Required Action A.1 has two Completion Times. The 1 hour Completion Time begins at the time the Condition is entered and each "Once per 8 hours thereafter" interval begins upon completion of Required Action A.1.

If after Condition A is entered, Required Action A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (including the 25% extension allowed by SR 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A was initially entered. If Required Action A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.

IMMEDIATE COMPLETION TIME

When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE	The purpose of this section is to define the proper use and application of Frequency requirements.
DESCRIPTION	Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.
	The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, "Surveillance Requirement (SR) Applicability." The "Specified Frequency" consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.
	Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated Specification is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.

(continued)

1.4 Frequency (continued)

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the Specification (not shown) is MODES 1, 2, and 3.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Completion of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the Specification). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the Specification, and the performance of the Surveillance is not otherwise modified (refer to Example 1.4-3), then SR 3.0.3 becomes applicable.

If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the Specification for which performance of the SR is required, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of SR 3.0.4.

(continued)

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after ≥ 25% RTP AND 24 hours thereafter

Example 1.4-2 has two Frequencies. The first is a one time performance Frequency, and the second is of the type shown in Example 1.4-1. The logical connector "AND" indicates that both Frequency requirements must be met. Each time reactor power is increased from a power level < 25% RTP to ≥ 25% RTP, the Surveillance must be performed within 12 hours.

The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the 25% extension allowed by SR 3.0.2. "Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to < 25% RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.

(continued)

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
------------------NOTE------------------ Not required to be performed until 12 hours after ≥ 25% RTP. -- Perform channel adjustment.	7 days

The interval continues whether or not the unit operation is < 25% RTP between performances.

As the Note modifies the required <u>performance</u> of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Surveillance. The Surveillance is still considered to be within the "specified Frequency." Therefore, if the Surveillance was not performed within the 7 day (plus 25% per SR 3.0.2) interval, but operation was < 25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours with power ≥ 25% RTP.

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance was not performed within this 12 hour interval, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 In MODES 1 and 2, the maximum local fuel pin centerline temperature shall be ≤ 5080 - (6.5 E-3) X (Burnup MWD/MTU)°F. Operation within this limit is ensured by compliance with the AXIAL POWER IMBALANCE protective limits preserved by the Reactor Protection System setpoints in LCO 3.3.1, "Reactor Protection System (RPS) Instrumentation," as specified in the COLR.

2.1.1.2 In MODES 1 and 2, the departure from nucleate boiling ratio (DNBR) shall be maintained greater than the limits of 1.3 for the BAW-2 correlation, 1.18 for the BWC correlation and 1.132 for the BHTP correlation. Operation within this limit is ensured by compliance with SL 2.1.1.3 and with the AXIAL POWER IMBALANCE protective limits preserved by the RPS setpoints in LCO 3.3.1, as specified in the COLR.

2.1.1.3 In MODES 1 and 2, Reactor Coolant System (RCS) core outlet temperature and pressure shall be maintained above and to the left of the SL shown in Figure 2.1.1-1.

2.1.2 RCS Pressure SL

In MODES 1, 2, 3, 4, and 5, the RCS pressure shall be maintained ≤ 2750 psig.

2.2 SL Violations

The following actions shall be completed:

2.2.1 In MODE 1 or 2, if SL 2.1.1.1, SL 2.1.1.2 or SL 2.1.1.3 is violated, be in MODE 3 within 1 hour.

2.2.2 In MODE 1 or 2, if SL 2.1.2 is violated, restore compliance and be in MODE 3 within 1 hour.

2.0 SLs

2.2 SL Violations (continued)

2.2.3 In MODES 3, 4, and 5, if SL 2.1.2 is violated, restore compliance within 5 minutes.

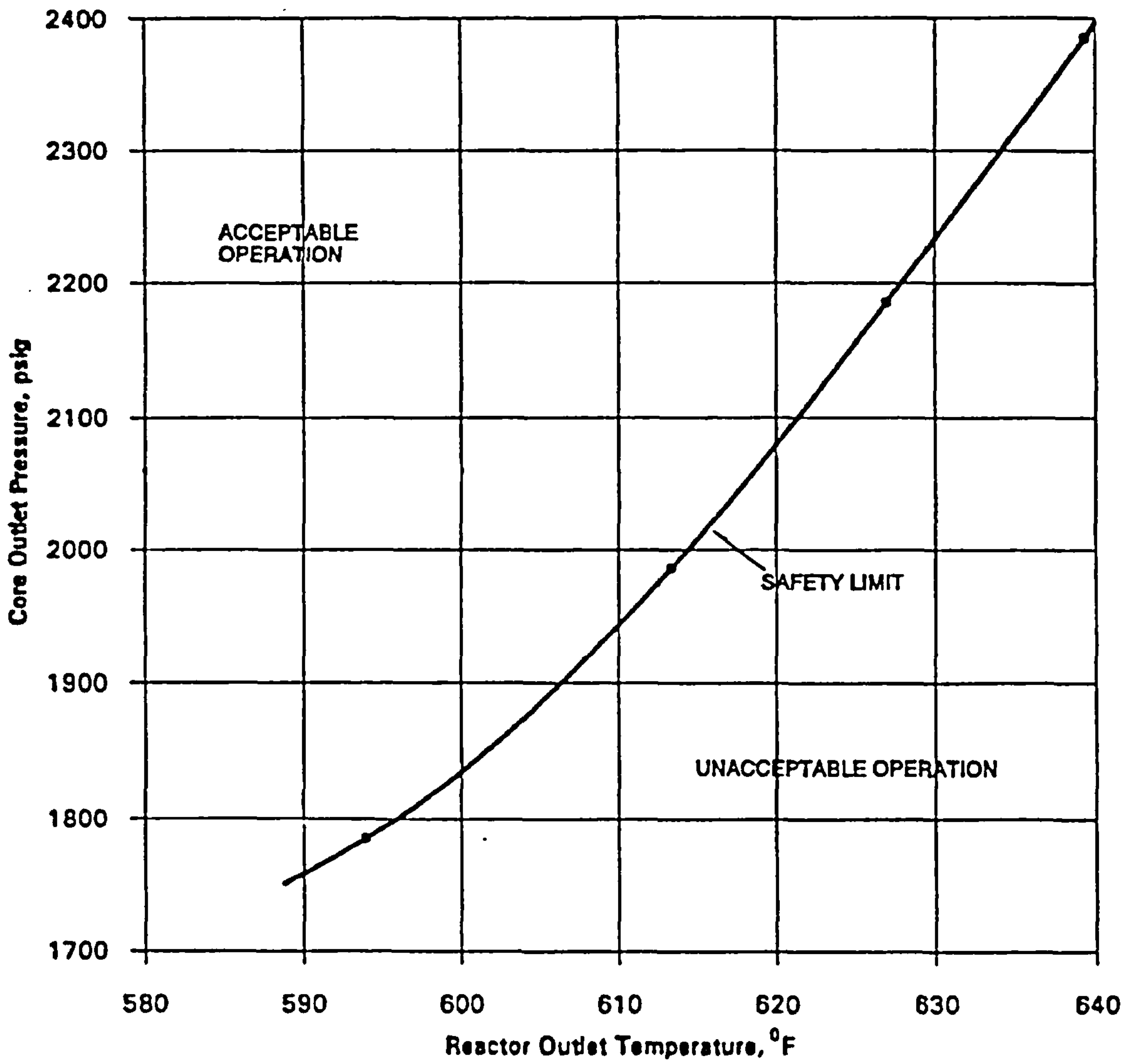

Figure 2.1.1-1 (page 1 of 1)

Reactor Coolant System DNB Safety Limits

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7 and LCO 3.0.8.

LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

LCO 3.0.3 When an LCO is not met, except as provided in the associated ACTIONS, and an associated ACTION is not met or provided, the unit shall be placed in a MODE or other specified condition in which the Specification is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

a. MODE 3 within 7 hours;

b. MODE 4 within 13 hours; and

c. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time; or

(continued)

3.0 LCO APPLICABILITY

LCO 3.0.4 (continued)

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY, the OPERABILITY of other equipment, or variables to be within limits. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the required testing.

LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system Specification ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, additional evaluations and limitations may be required in accordance with Specification 5.6.2.16, "Safety Function Determination Program." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the Specification in which the loss of safety function exists are required to be entered.

(continued)

3.0 LCO APPLICABILITY

LCO 3.0.6 (continued)

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

LCO 3.0.7

PHYSICS TESTS Exception LCOs (Specification 3.1.8 and 3.1.9) allow specified Technical Specifications (TS) requirements to be suspended to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with PHYSICS TESTS Exception LCOs is optional. When a PHYSICS TEST Exception LCO is desired to be met but is not met, the ACTIONS of the PHYSICS TESTS Exception LCO shall be met. When a PHYSICS TEST Exception LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with other applicable Specifications.

LCO 3.0.8

When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or

b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1

SRs shall be met during the MODES or other specified conditions in the Applicability for individual Specifications, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

SR 3.0.2

The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as "once," the above interval extension does not apply.

If a Required Action requires performance of a Surveillance or its Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.

Exceptions to this Specification are stated in the individual Specifications.

SR 3.0.3

If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

(continued)

3.0 SR APPLICABILITY

SR 3.0.3 (continued)	When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.
SR 3.0.4	Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM)

LCO 3.1.1 The SDM shall be greater than or equal to the limit specified in the COLR. The minimum limit shall be $\geq$ 1.0% $\Delta k/k$.

APPLICABILITY: MODES 3, 4, and 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.1.1 Verify SDM is greater than or equal to the limit specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 Reactivity Balance

LCO 3.1.2 The measured core reactivity balance shall be within ± 1% $\Delta k/k$ of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Measured core reactivity balance not within limit.	A.1	Re-evaluate core design and safety analysis and determine that the reactor core is acceptable for continued operation.	72 hours
	<u>AND</u>		
	A.2	Establish appropriate operating restrictions and SRs.	72 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	------------------NOTES------------------ 1. The predicted reactivity values may be adjusted (normalized) to correspond to the measured core reactivity prior to exceeding a fuel burnup of 60 effective full power days (EFPD) after each fuel loading. 2. This Surveillance is not required to be performed prior to entry into MODE 2. ---	
	Verify measured core reactivity balance is within ± 1% $\Delta k/k$ of predicted values.	Prior to entering MODE 1 after each fuel loading <u>AND</u> -----NOTE------ Only required after 60 EFPD --------------- 31 EFPD thereafter

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Moderator Temperature Coefficient (MTC)

LCO 3.1.3 The MTC shall be maintained within the limits specified in the COLR. The maximum positive limit shall be $\leq$ 0.0 $\Delta k/k/°F$ at $\geq$ 95% RTP and $\leq$ 0.9 E-4 $\Delta k/k/°F$ at < 95% RTP.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. MTC not within limits.	A.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.3.1 Verify MTC is within the upper limit specified in the COLR.	Prior to entering MODE 1 after each fuel loading

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.3.2	------------------NOTES------------------ 1. This SR is not required to be performed prior to entry into MODE 1 or 2. 2. If the MTC is more negative than the COLR limit when extrapolated to the end of cycle, this SR may be repeated prior to exceeding the minimum allowable boron concentration at which MTC is projected to exceed the lower limit. -- Verify extrapolated MTC is within the lower limit specified in the COLR.	Each fuel cycle within 7 EFPD after reaching an equilibrium boron concentration equivalent to 300 ppm

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 CONTROL ROD Group Alignment Limits

LCO 3.1.4 Each CONTROL ROD shall be OPERABLE and aligned to within 6.5% of its group average height.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One trippable CONTROL ROD inoperable, or not aligned to within 6.5% of its group average height, or both.	A.1 Align all CONTROL RODS in the group to within 6.5% of the group average height, while maintaining the rod insertion, group sequence, and group overlap limits in accordance with LCO 3.2.1, "Regulating Rod Insertion Limits."	1 hour
	<u>OR</u>	
	A.2.1.1 Verify SDM is $\geq 1\%\ \Delta k/k$.	1 hour <u>AND</u> Once per 12 hours thereafter
	<u>OR</u>	
	A.2.1.2 Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.2	Reduce THERMAL POWER to $\leq$ 60% of the ALLOWABLE THERMAL POWER.	2 hours
	AND		
	A.2.3	Reduce the nuclear overpower trip setpoint to $\leq$ 70% of the ALLOWABLE THERMAL POWER.	10 hours
	AND		
	A.2.4	Verify the potential ejected rod worth is within the assumptions of the rod ejection analysis.	72 hours
	AND		
	A.2.5	Perform SR 3.2.5.1.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1	Be in MODE 3.	6 hours
C. More than one trippable CONTROL ROD inoperable, or not aligned within 6.5% of its group average height, or both.	C.1.1	Verify SDM is $\geq$ 1% $\Delta k/k$.	1 hour
	OR		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.1.2 Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>	
	C.2 Be in MODE 3.	6 hours
D. One or more CONTROL RODS untrippable.	D.1.1 Verify SDM is $\geq 1\%\ \Delta k/k$.	1 hour
	<u>OR</u>	
	D.1.2 Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>	
	D.2 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify individual CONTROL ROD positions are within 6.5% of their group average height.	4 hours when the asymmetric CONTROL ROD alarm is inoperable AND 12 hours when the asymmetric CONTROL ROD alarm is OPERABLE
SR 3.1.4.2	Verify CONTROL ROD freedom of movement (trippability) by moving each individual CONTROL ROD that is not fully inserted ≥ 3% in any direction.	92 days
SR 3.1.4.3	-------------------NOTE------------------- With rod drop times determined with less than four reactor coolant pumps operating, operation may proceed provided operation is restricted to the pump combination operating during the rod drop time determination. -- Verify the rod drop time for each CONTROL ROD, from the fully withdrawn position, is ≤ 1.66 seconds from power interruption at the CONTROL ROD drive breakers to $\frac{3}{4}$ insertion (25% withdrawn position) with T_{avg} ≥ 525°F.	Prior to reactor criticality after each removal of the reactor vessel head

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Safety Rod Insertion Limits

LCO 3.1.5 Each safety rod shall be fully withdrawn.

APPLICABILITY: MODES 1 and 2.

----------------------------NOTE----------------------------
This LCO is not applicable while performing SR 3.1.4.2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One safety rod not fully withdrawn.	A.1 Withdraw the rod fully.	1 hour
	OR	
	A.2.1.1 Verify SDM is $\geq 1\%\ \Delta k/k$.	1 hour
	OR	
	A.2.1.2 Initiate boration to restore SDM to within limit.	1 hour
	AND	
	A.2.2 Declare the rod inoperable.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. More than one safety rod not fully withdrawn.	B.1.1 Verify SDM is $\geq$ 1% $\Delta k/k$.	1 hour
	OR	
	B.1.2 Initiate boration to restore SDM to within limit.	1 hour
	AND	
	B.2 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.5.1 Verify each safety rod is fully withdrawn.	12 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 AXIAL POWER SHAPING ROD (APSR) Alignment Limits

LCO 3.1.6 Each APSR shall be OPERABLE and aligned within 6.5% of the group average height.

APPLICABILITY: MODES 1 and 2, when the APSRs are not fully withdrawn.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One APSR inoperable, not aligned within its limits, or both.	A.1	Align the APSR group to within 6.5% of the inoperable or misaligned rod, while maintaining the APSR insertion limits in the COLR.	2 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify position of each APSR is within 6.5% of the group average height.	4 hours when the asymmetric CONTROL ROD alarm is inoperable AND 12 hours when the asymmetric CONTROL ROD alarm is OPERABLE

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Position Indicator Channels

LCO 3.1.7 The absolute position indicator channel and the relative position indicator channel for each CONTROL ROD and APSR shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

------------------------------------NOTE------------------------------------
Separate Condition entry is allowed for each inoperable position indicator channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The relative position indicator channel inoperable for one or more rods.	A.1 Determine the absolute position indicator channel for the rod(s) is OPERABLE.	8 hours AND Once per 12 hours thereafter
B. The absolute position indicator channel inoperable for one or more rods.	B.1 Determine position of the rods with inoperable absolute position indicator by actuating any of the affected rod's zone position reference indicators. AND	8 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.2	Determine rods with inoperable position indicators are maintained at the zone reference indicator position and within the limits specified in LCO 3.1.5, "Safety Rod Insertion Limit"; LCO 3.2.1, "Regulating Rod Insertion Limits"; or LCO 3.2.2, "AXIAL POWER SHAPING ROD (APSR) Insertion Limits," as applicable.	8 hours <u>AND</u> Once per 12 hours thereafter
C. The absolute position indicator channel and the relative position indicator channel inoperable for one or more rods. <u>OR</u> Required Action and associated Completion Time not met.	C.1	Declare the rod(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	Verify the absolute position indicator channels and the relative position indicator channels agree within the limit specified in the COLR.	12 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 PHYSICS TESTS Exceptions—MODE 1

LCO 3.1.8 During the performance of PHYSICS TESTS, the requirements of

LCO 3.1.4, "CONTROL ROD Alignment Limits";
LCO 3.1.5, "Safety Rod Insertion Limits";
LCO 3.1.6, "AXIAL POWER SHAPING ROD (APSR) Alignment Limits";
LCO 3.2.1, "Regulating Rod Insertion Limits," for the restricted operation region only;
LCO 3.2.3, "AXIAL POWER IMBALANCE Operating Limits"; and
LCO 3.2.4, "QUADRANT POWER TILT (QPT)"

may be suspended, provided:

a. THERMAL POWER is maintained ≤ 85% RTP;

b. Reactor trip setpoints on the nuclear overpower channels are set ≤ 10% RTP higher than the THERMAL POWER at which the test is performed, with a maximum setting of 90% RTP;

c. $F_Q(Z)$ and $F^N_{\Delta H}$ are maintained within the limits specified in the COLR; and

d. SDM is ≥ 1.0% Δk/k.

APPLICABILITY: MODE 1 during PHYSICS TESTS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit. AND A.2 Suspend PHYSICS TESTS exceptions.	15 minutes 1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. THERMAL POWER > 85% RTP. OR Nuclear overpower trip setpoint > 10% higher than PHYSICS TESTS power level. OR Nuclear overpower trip setpoint > 90% RTP. OR $F_Q(Z)$ or $F^N_{\Delta H}$ not within limits.	B.1 Suspend PHYSICS TESTS exceptions.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	Verify THERMAL POWER is ≤ 85% RTP.	1 hour
SR 3.1.8.2	Perform SR 3.2.5.1.	2 hours
SR 3.1.8.3	Verify nuclear overpower trip setpoint is ≤ 10% RTP higher than the THERMAL POWER at which the test is performed, with a maximum setting of 90% RTP.	8 hours

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.1.8.4 Verify SDM is $\geq$ 1.0% $\Delta k/k$.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.9 PHYSICS TESTS Exceptions—MODE 2

LCO 3.1.9 During performance of PHYSICS TESTS, the requirements of

LCO 3.1.3, "Moderator Temperature Coefficient (MTC)";
LCO 3.1.4, "CONTROL ROD Group Alignment Limits";
LCO 3.1.5, "Safety Rod Insertion Limits";
LCO 3.1.6, "AXIAL POWER SHAPING ROD (APSR) Alignment Limits";
LCO 3.2.1, "Regulating Rod Insertion Limits," for the restricted operation region only; and
LCO 3.4.2, "RCS Minimum Temperature for Criticality"

may be suspended, provided:

a. THERMAL POWER is $\leq$ 5% RTP;

b. Reactor trip setpoints on the nuclear overpower channels are set to $\leq$ 25% RTP; and

c. SDM is $\geq$ 1.0% $\Delta k/k$.

APPLICABILITY: MODE 2 during PHYSICS TESTS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. THERMAL POWER not within limit.	A.1 Open control rod drive trip breakers.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. SDM not within limit.	B.1	Initiate boration to restore SDM to within limit.	15 minutes
	<u>AND</u>		
	B.2	Suspend PHYSICS TESTS exceptions.	1 hour
C. Nuclear overpower trip setpoint not within limit.	C.1	Suspend PHYSICS TESTS exceptions.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.9.1	Verify THERMAL POWER is $\leq$ 5% RTP.	1 hour
SR 3.1.9.2	Verify nuclear overpower trip setpoint is $\leq$ 25% RTP.	8 hours
SR 3.1.9.3	Verify SDM is $\geq$ 1.0% $\Delta k/k$.	24 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.1 Regulating Rod Insertion Limits

LCO 3.2.1 Regulating rod groups shall be within the physical insertion, sequence, and overlap limits specified in the COLR.

APPLICABILITY: MODES 1 and 2.

---------------------------NOTE---------------------------
This LCO is not applicable while performing SR 3.1.4.2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating rod groups inserted in restricted operational region, or sequence or overlap, or any combination, not met.	A.1 Perform SR 3.2.5.1. AND A.2 Restore regulating rod groups to within limits.	Once per 2 hours 24 hours from discovery of failure to meet the LCO
B. Required Action and associated Completion Time of Condition A not met.	B.1 Reduce THERMAL POWER to less than or equal to THERMAL POWER allowed by regulating rod group insertion limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Regulating rod groups inserted in unacceptable operational region.	C.1	Initiate boration to restore SDM to $\geq$ 1% $\Delta k/k$.	15 minutes
	AND		
	C.2.1	Restore regulating rod groups to within restricted operating region.	2 hours
	OR		
	C.2.2	Reduce THERMAL POWER to less than or equal to the THERMAL POWER allowed by the regulating rod group insertion limits.	2 hours
D. Required Action and associated Completion Time of Condition C not met.	D.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	Verify regulating rod groups are within the sequence and overlap limits as specified in the COLR.	4 hours when the CONTROL ROD drive sequence alarm is inoperable AND 12 hours when the CONTROL ROD drive sequence alarm is OPERABLE
SR 3.2.1.2	Verify regulating rod groups meet the insertion limits as specified in the COLR	4 hours when the regulating rod insertion limit alarm is inoperable AND 12 hours when the regulating rod insertion limit alarm is OPERABLE
SR 3.2.1.3	Verify SDM $\geq$ 1% $\Delta k/k$.	Within 4 hours prior to achieving criticality

3.2 POWER DISTRIBUTION LIMITS

3.2.2 AXIAL POWER SHAPING ROD (APSR) Insertion Limits

LCO 3.2.2 APSRs shall be positioned within the limits specified in the COLR.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. APSRs not within limits.	A.1 Perform SR 3.2.5.1. <u>AND</u> A.2 Restore APSRs to within limits.	Once per 2 hours 24 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.2.1	Verify APSRs are within limits specified in the COLR.	12 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.3 AXIAL POWER IMBALANCE Operating Limits

LCO 3.2.3 AXIAL POWER IMBALANCE shall be maintained within the acceptable operating limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 40% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. AXIAL POWER IMBALANCE not within acceptable operating limits.	A.1 Perform SR 3.2.5.1. AND A.2 Restore AXIAL POWER IMBALANCE within acceptable operating limits.	Once per 2 hours 24 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to ≤ 40% RTP.	2 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.3.1	Verify AXIAL POWER IMBALANCE is within acceptable operating limits as specified in the COLR.	1 hour when AXIAL POWER IMBALANCE alarm is inoperable AND 12 hours when AXIAL POWER IMBALANCE alarm is OPERABLE

3.2 POWER DISTRIBUTION LIMITS

3.2.4 QUADRANT POWER TILT (QPT)

LCO 3.2.4 QPT shall be maintained less than or equal to the steady state limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. QPT greater than the steady state limit and less than or equal to the transient limit.	A.1.1 Perform SR 3.2.5.1.	Once per 2 hours
	<u>OR</u>	
	A.1.2.1 Reduce THERMAL POWER ≥ 2% RTP from the ALLOWABLE THERMAL POWER for each 1% of QPT greater than the steady state limit.	2 hours <u>OR</u> 2 hours after last performance of SR 3.2.5.1
	<u>AND</u>	
	A.1.2.2 Reduce nuclear overpower trip setpoint and nuclear overpower based on Reactor Coolant System flow and AXIAL POWER IMBALANCE trip setpoint ≥ 2% RTP from the ALLOWABLE THERMAL POWER for each 1% of QPT greater than the steady state limit.	10 hours <u>OR</u> 10 hours after last performance of SR 3.2.5.1
	<u>AND</u>	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	Restore QPT to less than or equal to the steady state limit.	24 hours from discovery of failure to meet the LCO.
B. QPT greater than the transient limit and less than or equal to the maximum limit due to misalignment of a CONTROL ROD or an APSR.	B.1	Reduce THERMAL POWER ≥ 2% RTP from ALLOWABLE THERMAL POWER for each 1% of QPT greater than the steady state limit.	30 minutes
	AND		
	B.2	Restore QPT to less than or equal to the transient limit.	2 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1	Reduce THERMAL POWER to < 60% of the ALLOWABLE THERMAL POWER.	2 hours
	AND		
	C.2	Reduce nuclear overpower trip setpoint to ≤ 65.5% of the ALLOWABLE THERMAL POWER.	10 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. QPT greater than the transient limit and less than or equal to the maximum limit due to causes other than the misalignment of either CONTROL ROD or APSR.	D.1	Reduce THERMAL POWER to < 60% of the ALLOWABLE THERMAL POWER.	2 hours
	AND		
	D.2	Reduce nuclear overpower trip setpoint to ≤ 65.5% of the ALLOWABLE THERMAL POWER.	10 hours
E. Required Action and associated Completion Time for Condition C or D not met.	E.1	Reduce THERMAL POWER to ≤ 20% RTP.	2 hours
F. QPT greater than the maximum limit.	F.1	Reduce THERMAL POWER to ≤ 20% RTP.	2 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.4.1	Verify QPT is within steady state limits as specified in the COLR.	12 hours when the QPT alarm is inoperable <u>AND</u> 7 days when the QPT alarm is OPERABLE <u>AND</u> When QPT has been restored to less than or equal to the steady state limit, 1 hour for 12 consecutive hours, or until verified acceptable at ≥ 95% RTP

3.2 POWER DISTRIBUTION LIMITS

3.2.5 Power Peaking Factors

LCO 3.2.5 $F_Q(Z)$ and $F^N_{\Delta H}$ shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. $F_Q(Z)$ not within limit.	A.1	Reduce THERMAL POWER ≥ 1% RTP for each 1% that $F_Q(Z)$ exceeds limit.	15 minutes
	AND		
	A.2	Reduce nuclear overpower trip setpoint and nuclear overpower based on Reactor Coolant System (RCS) flow and AXIAL POWER IMBALANCE trip setpoint ≥ 1% RTP for each 1% that $F_Q(Z)$ exceeds limit.	8 hours
	AND		
	A.3	Restore $F_Q(Z)$ to within limit.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. $F^N_{\Delta H}$ not within limit.	B.1	Reduce THERMAL POWER $\geq$ RH(%) RTP (specified in the COLR) for each 1% that $F^N_{\Delta H}$ exceeds limit.	15 minutes
	AND		
	B.2	Reduce nuclear overpower trip setpoint and nuclear overpower based on RCS flow and AXIAL POWER IMBALANCE trip setpoint $\geq$ RH(%) RTP (specified in the COLR) for each 1% that $F^N_{\Delta H}$ exceeds limit.	8 hours
	AND		
	B.3	Restore $F^N_{\Delta H}$ to within limit.	24 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 2.	2 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.5.1	-------------------NOTE-------------------- Only required to be performed when specified in LCO 3.1.8, "PHYSICS TESTS Exceptions—MODE 1," or when complying with Required Actions of LCO 3.1.4, "CONTROL ROD Group Alignment Limits"; LCO 3.2.1, "Regulating Rod Insertion Limits"; LCO 3.2.2, "AXIAL POWER SHAPING ROD (APSR) Insertion Limits"; LCO 3.2.3, "AXIAL POWER IMBALANCE Operating Limits"; LCO 3.2.4, "QUADRANT POWER TILT (QPT)." --	
	Verify $F_Q(Z)$ and $F^N_{\Delta H}$ are within limits by using the Incore Detector System to obtain a power distribution map.	As specified by the applicable LCO(s)

3.3 INSTRUMENTATION

3.3.1 Reactor Protection System (RPS) Instrumentation

LCO 3.3.1 Four channels of RPS instrumentation for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

CONDITIONS	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Place channel in bypass or trip.	1 hour
B. Two channels inoperable.	B.1 Place one channel in trip. <u>AND</u> B.2 Place second channel in bypass.	1 hour 1 hour
C. One or more RCPPM for one RCP inoperable.	C.1 Trip the RCPPM(s).	4 hours
D. Required Action and associated Completion Time of Condition A or B not met.	D.1 Enter the Condition referenced in Table 3.3.1-1 for the Function.	Immediately
E. Required Action and associated Completion Time of Condition C not met.	E.1.1 Verify 4 RCPs in operation. <u>AND</u> E.1.2 Reduce THERMAL POWER <2475 MW_{th} <u>OR</u> E.2 Enter Condition F	1 hour 1 hour 1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
F. As required by Required Action D.1 and referenced in Table 3.3.1-1 or by Required Action E.2.	F.1	Be in MODE 3.	6 hours
	AND		
	F.2	Open all CONTROL ROD drive (CRD) trip breakers.	6 hours
G. As required by Required Action D.1 and referenced in Table 3.3.1-1.	G.1	Open all CRD trip breakers.	6 hours
H. As required by Required Action D.1 and referenced in Table 3.3.1-1.	H.1	Reduce THERMAL POWER < 45% RTP.	6 hours
I. As required by Required Action D.1 and referenced in Table 3.3.1-1.	I.1	Reduce THERMAL POWER < 20% RTP.	6 hours
J. Secondary heat balance not based on required high accuracy instrumentation.	J.1	Reduce THERMAL POWER to $\leq$2568 MW_{th}	12 hours
	AND		
	J.2	Reduce Nuclear Overpower - High Setpoint to $\leq$ 103.3% RTP.	48 hours
K. Required Action and associated Completion Time of Condition J not met.	K.1	Be in MODE 3.	6 hours
	AND		
	K.2	Open all Control Rod drive (CRD) trip breakers.	6 hours

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Refer to Table 3.3.1-1 to determine which SRs apply to each RPS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.1.2	-----NOTES----- 1. Not required to be performed until 24 hours after THERMAL POWER is ≥ 15% RTP. 2. High accuracy instrumentation is required to be utilized when performing calorimetric secondary heat balance comparison unless Condition J has been entered. ----- Verify calorimetric secondary heat balance is ≤ 2% RTP greater than power range channel output. Adjust power range channel output if calorimetric exceeds power range channel output by > 2% RTP.	24 hours
SR 3.3.1.3	-----NOTE----- Not required to be performed until 24 hours after THERMAL POWER (TP) is ≥ 30% RTP. ----- Compare out of core measured AXIAL POWER IMBALANCE (API_0) to incore measured AXIAL POWER IMBALANCE (API_1) as follows: $(RTP/TP)(API_0 - API_1)$ = imbalance error Perform CHANNEL CALIBRATION if the absolute value of the imbalance error is ≥ 2.5% RTP.	31 days
SR 3.3.1.4	Perform CHANNEL FUNCTIONAL TEST.	45 days on a STAGGERED TEST BASIS

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.5	-------------------NOTES------------------ 1. Neutron detectors and RC flow sensors are excluded from this Surveillance. 2. Verification of bypass function is excluded from this Surveillance. --- Perform CHANNEL CALIBRATION.	92 days
SR 3.3.1.6	-------------------NOTE------------------- Neutron detectors and RCPPM current and voltage sensors are excluded from CHANNEL CALIBRATION. --- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.1.7	-------------------NOTE------------------- Neutron detectors and RCPPM current and voltage sensors and the watt transducer are excluded from RPS RESPONSE TIME testing. --- Verify RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

Table 3.3.1-1 (page 1 of 1)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Nuclear Overpower -				
a. High Setpoint	1,2[(a)]	F	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.5[(f,g)] SR 3.3.1.7	≤ 104.9% RTP [(d)] ≤ 103.3% RTP [(e)]
b. Low Setpoint	2[(b)], 3[(b)] 4[(b)], 5[(b)]	G	SR 3.3.1.1 SR 3.3.1.5	≤ 5% RTP
2. RCS High Outlet Temperature	1,2	F	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6	≤ 618°F
3. RCS High Pressure	1,2	F	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6 SR 3.3.1.7	≤ 2355 psig
4. RCS Low Pressure	1,2[(a)]	F	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6 SR 3.3.1.7	≥ 1900 psig
5. RCS Variable Low Pressure	1,2[(a)]	F	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6	RCS Variable Low Pressure equation in COLR
6. Reactor Building High Pressure	1,2,3[(c)]	F	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6	≤ 4 psig
7. Reactor Coolant Pump Power Monitor (RCPPM)	1,2[(a)]	F	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6 SR 3.3.1.7	More than one pump drawing ≤ 1152 or ≥ 14,400 kW
8. Nuclear Overpower RCS Flow and Measured AXIAL POWER IMBALANCE	1,2[(a)]	F	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	Nuclear Overpower RCS Flow and AXIAL POWER IMBALANCE setpoint envelope in COLR
9. Main Turbine Trip (Control Oil Pressure)	≥ 45% RTP	H	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6	≥ 45 psig
10. Loss of Both Main Feedwater Pumps (Control Oil Pressure)	≥ 20% RTP	I	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6	≥ 55 psig
11. Shutdown Bypass RCS High Pressure	2[(b)], 3[(b)] 4[(b)], 5[(b)]	G	SR 3.3.1.1 SR 3.3.1.4 SR 3.3.1.6	≤ 1820 psig

(a) When not in shutdown bypass operation.

(b) During shutdown bypass operation with any CRD trip breakers in the closed position and the CRD Control System (CRDCS) capable of rod withdrawal.

(c) With any CRD trip breaker in the closed position and the CRDCS capable of rod withdrawal.

(d) With secondary heat balance based on required high accuracy instrumentation.

(e) With secondary heat balance not based on required high accuracy instrumentation.

(f) If the as-found channel setpoint is conservative with respect to the Allowable Value (AV), but outside its predefined as-found acceptance criteria band, then the channel should be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the AV, the channel shall be declared inoperable.

(g) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the pre-established In-Plant Setpoint, or a value that is more conservative than the pre-established In-Plant Setpoint: otherwise the channel shall not be returned to OPERABLE status. The pre-established In-Plant Setpoint and the methodology used to determine the pre-established In-Plant Setpoint, the predefined as-found acceptance criteria band, and the as-left acceptance criteria are specified in the FSAR.

3.3 INSTRUMENTATION

3.3.2 Reactor Protection System (RPS) Manual Reactor Trip

LCO 3.3.2 The RPS Manual Reactor Trip Function shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5 with any CONTROL ROD drive (CRD) trip breaker in the closed position and the CRD Control System capable of rod withdrawal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Manual Reactor Trip Function inoperable.	A.1 Restore Function to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met in MODE 1, 2, or 3.	B.1 Be in MODE 3. AND B.2 Open all CRD trip breakers.	6 hours 6 hours
C. Required Action and associated Completion Time not met in MODE 4 or 5.	C.1 Open all CRD trip breakers.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform CHANNEL FUNCTIONAL TEST.	Once prior to each reactor startup if not performed within the previous 7 days

3.3 INSTRUMENTATION

3.3.3 Reactor Protection System (RPS)—Reactor Trip Module (RTM)

LCO 3.3.3 Four RTMs shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5 with any CONTROL ROD drive (CRD) trip breaker in the closed position and the CRD Control System (CRDCS) capable of rod withdrawal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RTM inoperable.	A.1.1 Trip the associated CRD trip device(s).	1 hour
	<u>OR</u>	
	A.1.2 Remove power from the associated CRD trip device(s).	1 hour
	<u>AND</u>	
	A.2 Physically remove the inoperable RTM.	1 hour
B. Required Action and associated Completion Time not met in MODE 1, 2, or 3.	B.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	B.2.1 Open all CRD trip breakers.	6 hours
	<u>OR</u>	
	B.2.2 Remove all power to the CRDCS.	6 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met in MODE 4 or 5.	C.1 Open all CRD trip breakers.	6 hours
	OR	
	C.2 Remove all power to the CRDCS.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	-------------------NOTE-------------------- When an RTM is placed in an inoperable status solely for performance of this Surveillance, entry into associated Conditions and Required Actions may be delayed for up to 8 hours, provided at least two RTMs are OPERABLE. ---	
	Perform CHANNEL FUNCTIONAL TEST.	31 days

3.3 INSTRUMENTATION

3.3.4 CONTROL ROD Drive (CRD) Trip Devices

LCO 3.3.4 The following CRD trip devices shall be OPERABLE:

a. Two AC CRD trip breakers;

b. Two DC CRD trip breaker pairs; and

c. Eight electronic trip assembly (ETA) relays.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5 when any CRD trip breaker is in the closed position and the CRD Control System (CRDCS) is capable of rod withdrawal.

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each CRD trip device.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more CRD trip breaker(s) undervoltage or shunt trip mechanism inoperable.	A.1 Trip the CRD trip breaker(s).	48 hours
	<u>OR</u>	
	A.2 Remove power from the CRD trip breaker(s).	48 hours
B. One or more CRD trip breaker(s) inoperable for reasons other than those in Condition A.	B.1 Trip the CRD trip breaker(s).	1 hour
	<u>OR</u>	
	B.2 Remove power from the CRD trip breaker(s).	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One or more ETA relays inoperable.	C.1	Transfer affected CONTROL ROD group to power supply with OPERABLE ETA relays.	1 hour
	OR		
	C.2	Trip corresponding AC CRD trip breaker.	1 hour
D. Required Action and associated Completion Time not met in MODE 1, 2, or 3.	D.1	Be in MODE 3.	6 hours
	AND		
	D.2.1	Open all CRD trip breakers.	6 hours
	OR		
	D.2.2	Remove all power to the CRDCS.	6 hours
E. Required Action and associated Completion Time not met in MODE 4 or 5.	E.1	Open all CRD trip breakers.	6 hours
	OR		
	E.2	Remove all power to the CRDCS.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.1	Perform CHANNEL FUNCTIONAL TEST.	31 days

3.3 INSTRUMENTATION

3.3.5 Engineered Safeguards Actuation System (ESAS) Instrumentation

LCO 3.3.5 Three channels of ESAS RCS Pressure instrumentation and two channels of ESAS RB Pressure instrumentation in each actuation train shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5-1.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each Parameter.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more RCS Pressure Parameters with one channel inoperable.	A.1 Place channel in trip.	1 hour
B. One or more RB Pressure Parameters with one required channel inoperable in one actuation train.	B.1 Place channel in trip.	72 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND	6 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.2	--------NOTE--------- Only required for RCS Pressure—Low Parameter. ---------------------	
		Reduce RCS pressure < 1800 psig.	12 hours
	AND		
	C.3	--------NOTE--------- Only required for RCS Pressure—Low Low Parameter. ---------------------	
		Reduce RCS pressure < 900 psig.	12 hours
	AND		
	C.4	--------NOTE--------- Only required for Reactor Building Pressure High setpoint and High High Parameter. ---------------------	
		Be in MODE 4.	12 hours

-shall be implemented prior to commencing Cycle 12 operation

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.5.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.5.2	-------------------NOTE------------------- When an ESAS channel is placed in an inoperable status solely for performance of this Surveillance, entry into associated Conditions and Required Actions may be delayed for up to 8 hours, provided the associated ES Function is maintained. -- Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.5.3	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.5.4	Verify ESF RESPONSE TIME within limits.	24 months on a STAGGERED TEST BASIS

Table 3.3.5-1 (page 1 of 1)
Engineered Safeguards Actuation System Instrumentation

PARAMETER	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	ALLOWABLE VALUE
1. Reactor Coolant System Pressure – Low	≥ 1800 psig	≥ 1625 psig
2. Reactor Coolant System Pressure – Low Low	≥ 900 psig	≥ 500 psig
3. Reactor Building Pressure – High	1,2,3	≤ 4 psig
4. Reactor Building Pressure – High High	1,2,3	≤ 30 psig

–shall be implemented prior to commencing Cycle 12 operation

3.3 INSTRUMENTATION

3.3.6 Engineered Safeguards Actuation System (ESAS) Manual Initiation

LCO 3.3.6 Two manual initiation channels for each of the following ESAS Functions shall be OPERABLE:

a. High Pressure Injection;

b. Low Pressure Injection; and

c. Reactor Building (RB) Isolation and Cooling.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when associated Engineered Safeguards equipment is required to be OPERABLE.

ACTIONS

-NOTE-
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ESAS Functions with one manual initiation channel inoperable.	A.1 Restore channel to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.6.1 Perform CHANNEL FUNCTIONAL TEST.	24 months

3.3 INSTRUMENTATION

3.3.7 Engineered Safeguards Actuation System (ESAS) Automatic Actuation Logic

LCO 3.3.7 The ESAS automatic actuation logic matrices shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when associated Engineered Safeguards (ES) equipment is required to be OPERABLE.

ACTIONS

-------------------------------------NOTE-------------------------------------
Separate Condition entry is allowed for each automatic actuation logic matrix.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more automatic actuation logic matrices inoperable.	A.1 Place associated component(s) in ES configuration.	1 hour
	<u>OR</u>	
	A.2 Declare the associated component(s) inoperable.	1 hour

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.7.1	Perform automatic actuation logic CHANNEL FUNCTIONAL TEST.	31 days on a STAGGERED TEST BASIS

3.3 INSTRUMENTATION

3.3.8 Emergency Diesel Generator (EDG) Loss of Power Start (LOPS)

LCO 3.3.8 Three channels of loss of voltage Function and three channels of degraded voltage Function EDG LOPS instrumentation per EDG shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4,
When associated EDG is required to be OPERABLE by LCO 3.8.2 "AC Sources-Shutdown."

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel of loss of voltage Function per EDG inoperable.	A.1 Restore the channel to OPERABLE status.	72 hours
B. One or two channels of degraded voltage Function per EDG inoperable.	B.1 Place the channel(s) in trip.	1 hour
C. Two or more channels of loss of voltage Function per EDG inoperable or three channels of degraded voltage Function per EDG inoperable.	C.1 Enter applicable Condition(s) and Required Action for EDG made inoperable by EDG LOPS.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met.	D.1 Be in Mode 3. AND D.2 Be in Mode 5.	6 hours 36 hours
E. Required Action and associated Completion Time of Condition B not met.	E.1 Enter applicable Condition(s) and Required Action for EDG made inoperable by EDG LOPS.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.1	-----NOTE----- When EDG LOPS instrumentation is placed in an inoperable status solely for performance of this Surveillance, entry into associated Conditions and Required Actions is not required provided the applicable Conditions(s) and Required Actions for the EDG made inoperable by EDG LOPS are entered. ---------- Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.8.2	-----NOTE----- Voltage sensors may be excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION with setpoint Allowable Value as follows: a. Degraded voltage ≥ 3933 and ≤ 3970 V with a time delay of 5.0 seconds ± 0.5 seconds; and b. Sudden loss of voltage from full voltage to 0.0 V with a time delay of 7.8 seconds ± 0.55 seconds at 0.0 V.	18 months

3.3 INSTRUMENTATION

3.3.9 Source Range Neutron Flux

LCO 3.3.9 Two source range neutron flux channels shall be OPERABLE.

APPLICABILITY: MODE 2 with each intermediate range channel $\leq$ 5E-10 amps or NI-5 or NI-6, and NI-7 or NI-8 $\leq$ 5% RTP,
MODES 3, 4 and 5.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One source range neutron flux channel inoperable.	A.1	Restore channel to OPERABLE status.	Prior to increasing THERMAL POWER
B. Two source range neutron flux channels inoperable.	B.1	Suspend operations involving positive reactivity changes.	Immediately
	AND		
	B.2	Initiate action to insert all CONTROL RODS.	Immediately
	AND		
	B.3	Open CRD trip breakers.	1 hour
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.4 Verify SDM is $\geq$ 1% $\Delta k/k$.	1 hour AND Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.9.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.9.2	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.9.3	Verify at least one decade overlap with intermediate range neutron flux channels.	Once each reactor startup prior to source range counts exceeding 10^6 cps if not performed within the previous 7 days

3.3 INSTRUMENTATION

3.3.10 Intermediate Range Neutron Flux

LCO 3.3.10 Two intermediate range neutron flux channels shall be OPERABLE.

APPLICABILITY: MODE 2,
MODES 3, 4, and 5 when any CONTROL ROD drive (CRD) trip breaker is in the closed position and the CRD Control System is capable of rod withdrawal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Restore channel to OPERABLE status.	Prior to entry into MODE 1
B. Two channels inoperable.	B.1 Suspend operations involving positive reactivity changes.	Immediately
	AND	
	B.2 Open CRD trip breakers.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.10.1 Perform CHANNEL CHECK.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.10.2	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.10.3	Verify at least one decade overlap with power range neutron flux channels.	Once each reactor startup prior to intermediate range indication exceeding 1E-5 amp if not performed within the previous 7 days

3.3 INSTRUMENTATION

3.3.11 Emergency Feedwater Initiation and Control (EFIC) System Instrumentation

LCO 3.3.11 The EFIC System instrumentation channels for each Function in Table 3.3.11-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.11-1.

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Emergency Feedwater (EFW) Initiation, Main Steam Line Isolation, or Main Feedwater (MFW) Isolation Functions listed in Table 3.3.11-1 with one channel inoperable.	A.1 Place channel(s) in bypass or trip. AND A.2 Place channel(s) in trip.	1 hour 72 hours
B. One or more EFW Initiation, Main Steam Line Isolation, or MFW Isolation Functions listed in Table 3.3.11-1 with two channels inoperable.	B.1 Place one channel in bypass. AND B.2 Place second channel in trip. AND	1 hour 1 hour (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.3	Restore one channel to OPERABLE status.	72 hours
C. One or more EFIC channels with one or two RCP status signals inoperable.	C.1	Place the affected RCP status signals in trip.	4 hours
D. One EFW Vector Valve Control channel inoperable.	D.1	Restore channel to OPERABLE status.	72 hours
E. Required Action and associated Completion Time not met for Functions 1.a or 1.b.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	--------NOTE--------- Only required for Function 1.a. --------------------- Open CONTROL ROD drive trip breakers.	6 hours
	AND		
	E.3	--------NOTE--------- Only required for Function 1.b. --------------------- Be in MODE 4.	12 hours
F. Required Action and associated Completion Time not met for Function 1.d.	F.1	Reduce THERMAL POWER to < 10% RTP.	6 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Required Action and associated Completion Time not met for Functions 1.c, 2, 3, or 4.	G.1 Reduce once through steam generator (OTSG) pressure to < 750 psig.	12 hours

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
Refer to Table 3.3.11-1 to determine which SRs shall be performed for each EFIC Function.

SURVEILLANCE	FREQUENCY
SR 3.3.11.1 Perform CHANNEL CHECK.	12 hours
SR 3.3.11.2 Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.11.3 Perform CHANNEL CALIBRATION.	24 months
--------------------------NOTE-------------------------- Only required to be performed in MODES 1 and 2. -- SR 3.3.11.4 Verify EFIC RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

Table 3.3.11-1 (page 1 of 1)
Emergency Feedwater Initiation and Control System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. EFW Initiation				
a. Loss of MFW Pumps	1,2[a],3[a]	4	SR 3.3.11.1 SR 3.3.11.2 SR 3.3.11.3	N/A
b. OTSG Level - Low	1,2,3	4 per OTSG	SR 3.3.11.1 SR 3.3.11.2 SR 3.3.11.3 SR 3.3.11.4	≥ 0 inches
c. OTSG Pressure - Low	1,2,3[b]	4 per OTSG	SR 3.3.11.1 SR 3.3.11.2 SR 3.3.11.3	≥ 600 psig
d. RCP Status	≥ 10% RTP	4 per RCP	SR 3.3.11.1 SR 3.3.11.2 SR 3.3.11.3	NA
2. EFW Vector Valve Control				
a. OTSG Pressure - Low	1,2,3[b]	4 per OTSG	SR 3.3.11.1 SR 3.3.11.2 SR 3.3.11.3	≥ 600 psig
c. OTSG Differential Pressure - High	1,2,3[b]	4	SR 3.3.11.1 SR 3.3.11.2 SR 3.3.11.3	≤ 125 psid
3. Main Steam Line Isolation				
a. OTSG Pressure - Low	1,2,3[b][c]	4 per OTSG	SR 3.3.11.1 SR 3.3.11.2 SR 3.3.11.3 SR 3.3.11.4	≥ 600 psig
4. MFW Isolation				
a. OTSG Pressure - Low	1,2,3[b][d]	4 per OTSG	SR 3.3.11.1 SR 3.3.11.2 SR 3.3.11.3 SR 3.3.11.4	≥ 600 psig

(a) When the RPS is not in shutdown bypass.

(b) When OTSG pressure ≥ 750 psig.

(c) Except when all MSIVs are closed and deactivated.

(d) Except when all MFIVs are closed and deactivated.

3.3 INSTRUMENTATION

3.3.12 Emergency Feedwater Initiation and Control (EFIC) Manual Initiation

LCO 3.3.12 Two manual initiation switches per actuation channel for each of the following EFIC Functions shall be OPERABLE:

a. Steam generator (OTSG) A Main Feedwater (MFW) Isolation;

b. OTSG B MFW Isolation;

c. OTSG A Main Steam Line Isolation;

d. OTSG B Main Steam Line Isolation; and

e. Emergency Feedwater (EFW) Actuation.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more EFIC Function(s) with one manual initiation switch inoperable in one actuation channel.	A.1 Place trip module for the associated EFIC Function(s) in trip.	72 hours
B. One or more EFIC Function(s) with both manual initiation switches inoperable in one actuation channel.	B.1 Restore one manual initiation switch to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One of more EFIC Functions with one manual initiation switch inoperable in both actuation channels.	C.1	Place trip modules for the associated EFIC Function(s) in trip.	1 hour
D. One or more EFIC Function(s) with both manual initiation switches inoperable in both actuation channels.	D.1	Restore one actuation channel for the associated EFIC Function(s) to OPERABLE status.	1 hour
E. Required Action and associated Completion Time not met.	E.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	E.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.12.1	Perform CHANNEL FUNCTIONAL TEST.	31 days

3.3 INSTRUMENTATION

3.3.13 Emergency Feedwater Initiation and Control (EFIC) Automatic Actuation Logic

LCO 3.3.13 Channel A and B EFIC Automatic Actuation logic shall be OPERABLE for each Function listed below:

a. Main Feedwater Isolation;

b. Main Steam Line Isolation;

c. Emergency Feedwater Actuation; and

d. Vector Valve Enable Logic.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channel A Functions inoperable with all channel B Functions OPERABLE; or one or more channel B Functions inoperable with all channel A Functions OPERABLE.	A.1 Restore affected channel to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.13.1 Perform CHANNEL FUNCTIONAL TEST.	31 days

3.3 INSTRUMENTATION

3.3.14 Emergency Feedwater Initiation and Control (EFIC)-Emergency Feedwater (EFW)—Vector Valve Logic

LCO 3.3.14 Four channels of vector valve logic shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One vector valve logic channel inoperable.	A.1 Restore channel to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.14.1 Perform a CHANNEL FUNCTIONAL TEST.	31 days

3.3 INSTRUMENTATION

3.3.15 Reactor Building (RB) Purge Isolation-High Radiation

LCO 3.3.15 One channel of Reactor Building Purge Isolation-High Radiation shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Suspend movement of recently irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.15.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.15.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.15.3	Perform CHANNEL CALIBRATION.	18 months

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3.3 INSTRUMENTATION

3.3.17 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.17 The PAM instrumentation for each Function in Table 3.3.17-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.7.2.a.	Immediately
C. One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1	Enter the Condition referenced in Table 3.3.17-1 for the Function.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.17-1.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	Be in MODE 4.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.17-1.	F.1	Initiate action in accordance with Specification 5.7.2.a.	Immediately

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
These SRs apply to each PAM instrumentation Function in Table 3.3.17-1.

SURVEILLANCE		FREQUENCY
SR 3.3.17.1	--------------------NOTE-------------------- Not required for Function 4. -- Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.17.2	------------------NOTE --------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- ------------------NOTE --------------------- Not required for Functions 23 and 25. -- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.17.3	------------------NOTE -------------------- Only required for Functions 23 and 25. --- Perform CHANNEL FUNCTIONAL TEST.	24 months

Table 3.3.17-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1
1.	Wide Range Neutron Flux	2	E
2.	RCS Hot Leg Temperature	2	E
3.	RCS Pressure (Wide Range)	2	E
4.	Reactor Coolant Inventory	2	F
5.	Borated Water Storage Tank Level	2	E
6.	High Pressure Injection Flow	2 per injection line	E
7.	Containment Sump Water Level (Flood Level)	2	E
8.	Containment Pressure (Expected Post-Accident Range)	2	E
9.	Containment Pressure (Wide Range)	2	E
10.	Containment Isolation Valve Position	2 per penetration[a][b]	E
11.	Containment Area Radiation (High Range)	2	F
12.	Not Used		
13.	Pressurizer Level	2	E
14.	Steam Generator Water Level (Start-up Range)	2 per OTSG	E
15.	Steam Generator Water Level (Operating Range)	2 per OTSG	E
16.	Steam Generator Pressure	2 per OTSG	E
17.	Emergency Feedwater Tank Level	2	E
18a.	Core Exit Temperature (Thermocouple)	2 thermocouples per core quadrant	E
18b.	Core Exit Temperature (Recorder)	2	E
19.	Emergency Feedwater Flow	2 per OTSG	E
20.	Low Pressure Injection Flow	2	E
21.	Degrees of Subcooling	2	E
22.	Emergency Diesel Generator kW Indication	2[c]	E
23.	LPI Pump Run Status	2	E
24.	DHV-42 and DHV-43 Open Position	2	E
25.	HPI Pump Run Status	2	E
26.	RCS Pressure (Low Range)	2	E

(a) Only one position indication is required for penetrations with one Control Room indicator.

(b) Not required for isolation valves whose associated penetration is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(d) One indicator per EDG.

3.3 INSTRUMENTATION

3.3.18 Remote Shutdown System

LCO 3.3.18 The Remote Shutdown System Functions in Table 3.3.18-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

-----NOTE-----
These SRs apply to each Remote Shutdown System Instrumentation Function in Table 3.3.18-1.

SURVEILLANCE		FREQUENCY
SR 3.3.18.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.18.2	-----NOTE----- Not required for Function 1.a. ----- Perform CHANNEL CALIBRATION for each required instrumentation channel.	24 months

Table 3.3.18-1 (page 1 of 1)
Remote Shutdown System Instrumentation

	FUNCTION/INSTRUMENT	REQUIRED NUMBER OF CHANNELS
1.	Reactivity Control	
	a. Reactor Trip Breaker (RTB) Position	1 per trip breaker
	b. Source Range Neutron Flux	1
2.	Reactor Coolant System (RCS) Pressure Control	
	a. RCS Wide Range Pressure	1
3.	RCS Temperature Control via Steam Generators (OTSGs)	
	a. Reactor Coolant Hot Leg Temperature	1 per loop
	b. Reactor Coolant Cold Leg Temperature	1 per loop
	c. OTSG Pressure	1 per OTSG
	d. OTSG Level	1 Low Range and 1 High Range per OTSG
	e. Emergency Feedwater Flow	1 per OTSG
	f. Emergency Feedwater Tank Level	1
4.	RCS Inventory Control	
	a. Pressurizer Level	1
	b. High Pressure Injection Flow	1 per injection line

effective as of the date of issuance and shall be implemented prior to restart following the Fall 2001 outage MAR 2 2 2001

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits

LCO 3.4.1 RCS DNB parameters for loop pressure, hot leg temperature, and RCS total flow rate shall be within limits for the number of reactor coolant pumps (RCPs) in operation.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more RCS DNB parameters not within limits.	A.1 Restore RCS DNB parameter(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	-------------------NOTE------------------- With three RCPs operating, the limit is applied to the loop with two RCPs in operation. -- Verify RCS loop pressure meets the RCS loop pressure limits specified in the COLR.	12 hours
SR 3.4.1.2	-------------------NOTE------------------- With three RCPs operating, the limit is applied to the loop with two RCPs in operation. -- Verify RCS hot leg temperature meets the RCS hot leg temperature limit specified in the COLR, AND is ≤ 605.8°F.	12 hours
SR 3.4.1.3	Verify RCS total flow rate meets the RCS total flow rate limits specified in the COLR, AND is ≥133.5 E6 lb/hr with four RCPs operating or ≥ 99.7 E6 lb/hr with three RCPs operating.	12 hours
SR 3.4.1.4	-------------------NOTE------------------- Only required to be performed when stable thermal conditions are established > 90% of ALLOWABLE THERMAL POWER. -- Verify RCS total flow rate is within limit by measurement.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 RCS Minimum Temperature for Criticality

LCO 3.4.2 Each RCS loop average temperature (T_{avg}) shall be ≥ 525°F.

APPLICABILITY: MODE 1,
MODE 2 with k_{eff} ≥ 1.0.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. T_{avg} in one or more RCS loops not within limit.	A.1 Be in MODE 3.	30 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.2.1 Verify RCS T_{avg} in each loop ≥ 525°F.	Within 15 minutes prior to achieving criticality <u>AND</u> ------NOTE----- Only required if any RCS loop T_{avg} < 530°F --------------- 30 minutes thereafter

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.3 RCS pressure, RCS temperature, and RCS heatup and cooldown rates shall be maintained within the limits specified in the PTLR.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Required Action A.2 shall be completed whenever this Condition is entered. --------------------- Requirements of LCO not met in MODE 1, 2, 3, or 4.	A.1 Restore parameter(s) to within limits. AND A.2 Determine RCS is acceptable for continued operation.	30 minutes 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours
C. ---------NOTE--------- Required Action C.2 shall be completed whenever this Condition is entered. --------------------- Requirements of LCO not met in other than MODE 1, 2, 3, or 4.	C.1 Initiate action to restore parameter(s) to within limit. AND C.2 Determine RCS is acceptable for continued operation.	Immediately Prior to entering MODE 4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	-------------------NOTE------------------- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. -- Verify RCS pressure, RCS temperature, and RCS heatup and cooldown rates are within the limits specified in the PTLR.	30 minutes

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Loops—MODE 3

LCO 3.4.4 Two RCS loops shall be OPERABLE and at least one RCS loop shall be in operation.

---------------------------NOTE---------------------------
All reactor coolant pumps (RCPs) may be de-energized for ≤ 1 hour per 8 hour period provided:

a. No operations are permitted that would cause reduction of the RCS boron concentration; and

b. Core outlet temperature is maintained so as to assure subcooling throughout the RCS.

APPLICABILITY: MODE 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RCS loop inoperable.	A.1 to Restore RCS loop OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 4.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. No RCS loop OPERABLE. <u>OR</u> No RCS loop in operation.	C.1 Suspend all operations involving a reduction of RCS boron concentration. <u>AND</u>	Immediately
	C.2 Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.4.1	Verify one RCS loop is in operation.	12 hours
SR 3.4.4.2	Verify correct breaker alignment and indicated power available to the required pump that is not in operation.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Loops—MODE 4

LCO 3.4.5 Two loops consisting of any combination of RCS loops and decay heat removal (DHR) loops shall be OPERABLE and at least one loop shall be in operation.

---------------------------NOTE---------------------------

All reactor coolant pumps (RCPs) may be de-energized for ≤ 8 hours per 24 hour period for the transition to or from the DHR System, and all RCPs and DHR pumps may be de-energized for ≤ 1 hour per 8 hour period for any other reason, provided:

a. No operations are permitted that would cause reduction of the RCS boron concentration; and

b. Core outlet temperature is maintained so as to assure subcooling throughout the RCS.

APPLICABILITY: MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RCS loop inoperable. AND Two DHR loops inoperable.	A.1 Initiate action to restore a second loop to OPERABLE status.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One DHR loop inoperable. AND Two RCS loops inoperable.	B.1	Initiate action to restore a second loop to OPERABLE status.	Immediately
	OR		
	B.2	Be in MODE 5.	24 hours
C. All RCS and DHR loops inoperable. OR No RCS or DHR loop in operation.	C.1	Suspend all operations involving a reduction in RCS boron concentration.	Immediately
	AND		
	C.2	Initiate action to restore one loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify one DHR or RCS loop is in operation.	12 hours
SR 3.4.5.2	Verify correct breaker alignment and indicated power available to the required pump that is not in operation.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Loops—MODE 5, Loops Filled

LCO 3.4.6 One decay heat removal (DHR) loop shall be OPERABLE and in operation, and either:

a. One additional DHR loop shall be OPERABLE; or

b. One steam generator (OTSG) shall be OPERABLE.

----------------------------NOTES----------------------------

1. The DHR pump of the loop in operation may be de-energized for ≤ 1 hour per 8 hour period provided:

    a. No operations are permitted that would cause reduction of the RCS boron concentration; and

    b. Core outlet temperature is maintained so as to assure subcooling throughout the RCS.

2. One required DHR loop may be inoperable for up to 2 hours for surveillance testing provided that the other DHR loop is OPERABLE and in operation.

3. All DHR loops may be removed from operation during planned heatup to MODE 4 provided at least one RCS loop is in operation.

APPLICABILITY: MODE 5 with RCS loops filled.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DHR loop inoperable. AND Required OTSG inoperable.	A.1 Initiate action to restore a second DHR loop to OPERABLE status. OR A.2 Initiate action to restore an OTSG to OPERABLE status.	Immediately Immediately
B. Required DHR loop inoperable. OR No DHR loop in operation.	B.1 Suspend all operations involving a reduction in RCS boron concentration. AND B.2 Initiate action to restore one DHR loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify one DHR loop is in operation.	12 hours
SR 3.4.6.2	Verify required OTSG capability to act as a heat sink.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.6.3	Verify correct breaker alignment and indicated power available to the required DHR pump that is not in operation.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Loops—MODE 5, Loops Not Filled

LCO 3.4.7 Two decay heat removal (DHR) loops shall be OPERABLE and at least one DHR loop shall be in operation.

-----NOTES-----

1. All DHR pumps may be de-energized for ≤ 1 hour per 8 hour period provided:

   a. Core outlet temperature is maintained so as to assure subcooling throughout the RCS.

   b. No operations are permitted that would cause reduction of the RCS boron concentration; and

   c. No draining operations to further reduce the RCS water volume are permitted.

2. One DHR loop may be inoperable for ≤ 2 hours for surveillance testing provided that the other DHR loop is OPERABLE and in operation.

APPLICABILITY: MODE 5 with RCS loops not filled.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more DHR loop(s) inoperable.	A.1	Initiate action to restore DHR loop(s) to OPERABLE status.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. No DHR loop in operation.	B.1	Suspend all operations involving reduction in RCS boron concentration.	Immediately
	AND		
	B.2	Initiate action to restore one DHR loop to operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Verify one DHR loop is in operation.	12 hours
SR 3.4.7.2	Verify correct breaker alignment and indicated power available to the required DHR pump that is not in operation.	7 days

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.8 Pressurizer

LCO 3.4.8 The pressurizer shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Restore level to within limit.	1 hour
B. Capacity of pressurizer heaters capable of being powered by emergency power supply less than limit.	B.1 Restore pressurizer heater capability.	72 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify pressurizer water level ≤ 290 inches.	12 hours
SR 3.4.8.2	Verify ≥ 252 kW of pressurizer heaters are capable of being powered from each emergency power supply.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer Safety Valves

LCO 3.4.9 Two pressurizer safety valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1 Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time not met. OR Two pressurizer safety valves inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	-----------------NOTE---------------------- Not required to be performed prior to entry into MODE 3 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 36 hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup. --- Verify each pressurizer safety valve lift setpoint is $\geq$ 2450 psig and $\leq$ 2550 psig in accordance with the Inservice Testing Program. Valves removed for testing shall be reset to $\pm$ 1% of the nominal setpoint.	In accordance with the Inservice Testing Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Power Operated Relief Valve (PORV)

LCO 3.4.10 The PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. PORV inoperable.	A.1 Close block valve. AND A.2 Remove power from block valve.	1 hour 1 hour
B. Block valve inoperable.	B.1.1 Close block valve. AND B.1.2 Remove power from block valve. OR B.2.1 Close PORV. AND B.2.2 Remove power from PORV solenoid valve.	1 hour 1 hour 1 hour 1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	-------------------NOTE------------------- Not required to be performed with block valve closed in accordance with the Required Actions of this Specification. -- Perform one complete cycle of the block valve.	92 days
SR 3.4.10.2	-------------------NOTE------------------- Only required to be performed in MODES 1 and 2. -- Perform one complete cycle of the PORV.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Low Temperature Overpressure Protection (LTOP) System

LCO 3.4.11 An LTOP System shall be OPERABLE with a maximum of one makeup pump capable of injecting into the RCS, high pressure injection (HPI) deactivated, the core flood tanks (CFTs) isolated and:

a. Pressurizer level ≤ 155 inches and an OPERABLE power operated relief valve (PORV) with a lift setpoint of ≤ 454 psig; or

b. The RCS depressurized and an RCS vent of ≥ 0.75 square inch.

APPLICABILITY: MODE 4 when RCS temperature is ≤ 264°F,
MODE 5,
MODE 6 when the reactor vessel head is not completely detensioned.

----------------------NOTE----------------------
CFT isolation is only required when CFT pressure is greater than or equal to the maximum RCS pressure for the existing RCS temperature allowed by the pressure and temperature limit curves provided in the PTLR.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. More than one makeup pump capable of injecting into the RCS.	A.1 --------NOTE----------- Two makeup pumps may be capable of injecting into the RCS during pump swap operation for ≤ 15 minutes. ----------------------- Initiate action to verify only one makeup pump is capable of injecting into the RCS.	Immediately
B. HPI capable of actuation.	B.1 Initiate action to verify HPI deactivated.	Immediately
C. A CFT not isolated when CFT pressure is greater than or equal to the maximum RCS pressure for existing temperature allowed in the PTLR.	C.1 Isolate affected CFT.	1 hour
D. Required Action C.1 not met within the required Completion Time.	D.1 Increase RCS temperature to > 208°F.	12 hours
	<u>OR</u>	
	D.2 Depressurize affected CFT to < 454 psig.	12 hours
E. Pressurizer level > 155 inches.	E.1 Restore pressurizer level to ≤ 155 inches.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action E.1 not met within the required Completion Time.	F.1 Close and maintain closed the makeup control valve and its associated isolation valve.	12 hours
	AND	
	F.2 Stop RCS heatup.	12 hours
G. PORV inoperable.	G.1 Restore PORV to OPERABLE status.	1 hour
H. Required Action G.1 not met within the required Completion Time.	H.1 Reduce makeup tank level to ≤ 88 inches.	12 hours
	AND	
	H.2 Deactivate low low makeup tank level interlock to the borated water storage tank suction valves.	12 hours
I. Pressurizer level > 155 inches.	I.1 Restore LTOP System to OPERABLE status.	1 hour
AND	OR	
PORV inoperable.	I.2 Depressurize RCS and establish RCS vent of ≥ 0.75 square inch.	12 hours
OR		
LTOP System inoperable for any reason other than Condition A through Condition H.		

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.11.1	Verify a maximum of one makeup pump is capable of injecting into the RCS.	12 hours
SR 3.4.11.2	Verify HPI is deactivated.	12 hours
SR 3.4.11.3	--------------NOTE-------------- Only required to be performed when CFT isolation is required ------------------------------- Verify each CFT isolation valve is closed and deactivated.	12 hours
SR 3.4.11.4	--------------NOTE-------------- Not required to be performed when complying with LCO 3.4.11.b ------------------------------- Verify pressurizer level is ≤ 155 inches.	30 minutes during RCS heatup and cooldown <u>AND</u> 12 hours
SR 3.4.11.5	--------------NOTE-------------- Not required to be performed when complying with LCO 3.4.11.b ------------------------------- Verify PORV block valve is open.	12 hours
SR 3.4.11.6	--------------NOTE-------------- Only required when complying with LCO 3.4.11.b. ------------------------------- Verify RCS vent ≥ 0.75 square inch is open.	12 hours for unlocked vent opening(s) <u>AND</u> 31 days for locked vent opening(s)

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.11.7	Perform CHANNEL FUNCTIONAL TEST for PORV.	Within 12 hours before or after decreasing RCS temperature to ≤ 264°F <u>AND</u> 31 days thereafter
SR 3.4.11.8	Perform CHANNEL CALIBRATION for PORV.	24 months
SR 3.4.11.9	--------------NOTE---------------- Not required to be performed when complying with LCO 3.4.11.b ---------------------------------- Verify PORV is selected to the low range setpoint.	 12 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 RCS Operational LEAKAGE

LCO 3.4.12 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. 1 gpm unidentified LEAKAGE;

c. 10 gpm identified LEAKAGE; and

d. 150 gpd of primary to secondary LEAKAGE through any one steam generator (OTSG).

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS operational LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE or primary to secondary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time not met. OR Pressure boundary LEAKAGE exists. OR Primary to secondary LEAKAGE not within limit.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	---------------NOTES---------------------- 1. Not required to be performed in MODE 4. Not required in MODE 3 until 12 hours of steady state operation. 2. Not applicable to primary to secondary LEAKAGE. -- Verify RCS operational LEAKAGE is within limits by performance of RCS water inventory balance.	72 hours
SR 3.4.12.2	---------------NOTE----------------------- Not required to be performed until 12 hours after establishment of steady state operation. -- Verify primary to secondary LEAKAGE is ≤ 150 gallons per day through any one steam generator.	72 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 RCS Pressure Isolation Valve (PIV) Leakage

LCO 3.4.13 Leakage from each RCS PIV shall be ≤ 5 gpm and the Automatic Closure and Interlock System (ACIS) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4, except valves in the decay heat removal (DHR) flow path when in, or during the transition to or from the DHR mode of operation.

ACTIONS

-------------------------------------NOTES-------------------------------------
1. Separate Condition entry is allowed for each flow path.

2. Enter applicable Conditions and Required Actions for systems made inoperable by an inoperable PIV.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more flow paths with leakage from one or more RCS PIVs not within limit.	------------NOTE------------ Each valve used to satisfy Required Action A.1 and Required Action A.2 must have been verified to meet SR 3.4.13.1 and be on the high pressure portion of the system. ----------------------------	(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.1	Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, deactivated automatic, or check valve.	4 hours
	AND		
	A.2	Isolate the high pressure portion of the affected system from the low pressure portion by use of a second closed manual, deactivated automatic, or check valve.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours
C. ACIS inoperable.	C.1	Isolate the affected penetration by use of one closed manual or deactivated automatic valve.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.13.1	-------------------NOTE------------------- Not required to be performed in MODES 3 and 4. -- Verify equivalent leakage from each RCS PIV is within limit at an RCS pressure of 2155 psig.	In accordance with the Inservice Testing Program AND Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months
SR 3.4.13.2	Verify ACIS prevents the valves from being opened with a simulated or actual RCS pressure signal of 284 psig (nominal).	24 months
SR 3.4.13.3	Verify ACIS causes the valves to close automatically with a simulated or actual RCS pressure signal of 284 psig (nominal).	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.14 RCS Leakage Detection Instrumentation

LCO 3.4.14 The following RCS leakage detection instrumentation shall be OPERABLE:

a. One containment sump monitor; and

b. One containment atmosphere radioactivity monitor (gaseous or particulate).

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment sump monitor inoperable.	A.1 Perform SR 3.4.12.1. AND A.2 Restore containment sump monitor to OPERABLE status.	Once per 24 hours 30 days
B. Required containment atmosphere radioactivity monitor inoperable.	B.1.1 Analyze grab samples of the containment atmosphere. OR	Once per 24 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.1.2 Perform SR 3.4.12.1.	Once per 24 hours
	AND	
	B.2 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	AND	
	C.2 Be in MODE 5.	36 hours
D. Both required monitors inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.1	Perform CHANNEL CHECK of required containment atmosphere radioactivity monitor.	12 hours
SR 3.4.14.2	Perform CHANNEL FUNCTIONAL TEST of required containment atmosphere radioactivity monitor.	92 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.14.3	Perform CHANNEL CALIBRATION of containment sump monitor.	24 months
SR 3.4.14.4	Perform CHANNEL CALIBRATION of required containment atmosphere radioactivity monitor.	18 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.15 RCS Specific Activity

LCO 3.4.15 The specific activity of the reactor coolant shall be within limits.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS average temperature (T_{avg}) ≥ 500°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 > 1.0 μCi/gm.	------------NOTE------------ LCO 3.0.4.c is applicable. ---------------------------	
	A.1 Verify DOSE EQUIVALENT I-131 within the acceptable region of Figure 3.4.15-1.	Once per 4 hours
	<u>AND</u>	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	48 hours
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> DOSE EQUIVALENT I-131 in the unacceptable region of Figure 3.4.15-1.	B.1 Be in MODE 3 with T_{avg} < 500°F.	6 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Gross specific activity of the coolant not within limit.	C.1 Perform SR 3.4.15.2. AND C.2 Be in MODE 3 with T_{avg} < 500°F.	4 hours 6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Verify reactor coolant gross specific activity ≤ 100/Ē μCi/gm.	7 days
SR 3.4.15.2	-------------------NOTE-------------------- Only required to be performed in MODE 1. --- Verify reactor coolant DOSE EQUIVALENT I-131 specific activity ≤ 1.0 μCi/gm.	14 days AND Between 2 and 6 hours after THERMAL POWER change of ≥ 15% RTP within a 1 hour period

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.15.3	-------------------NOTE-------------------- Not required to be performed until 31 days after a minimum of 2 EFPD and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for ≥ 48 hours. --- Determine Ē.	184 days

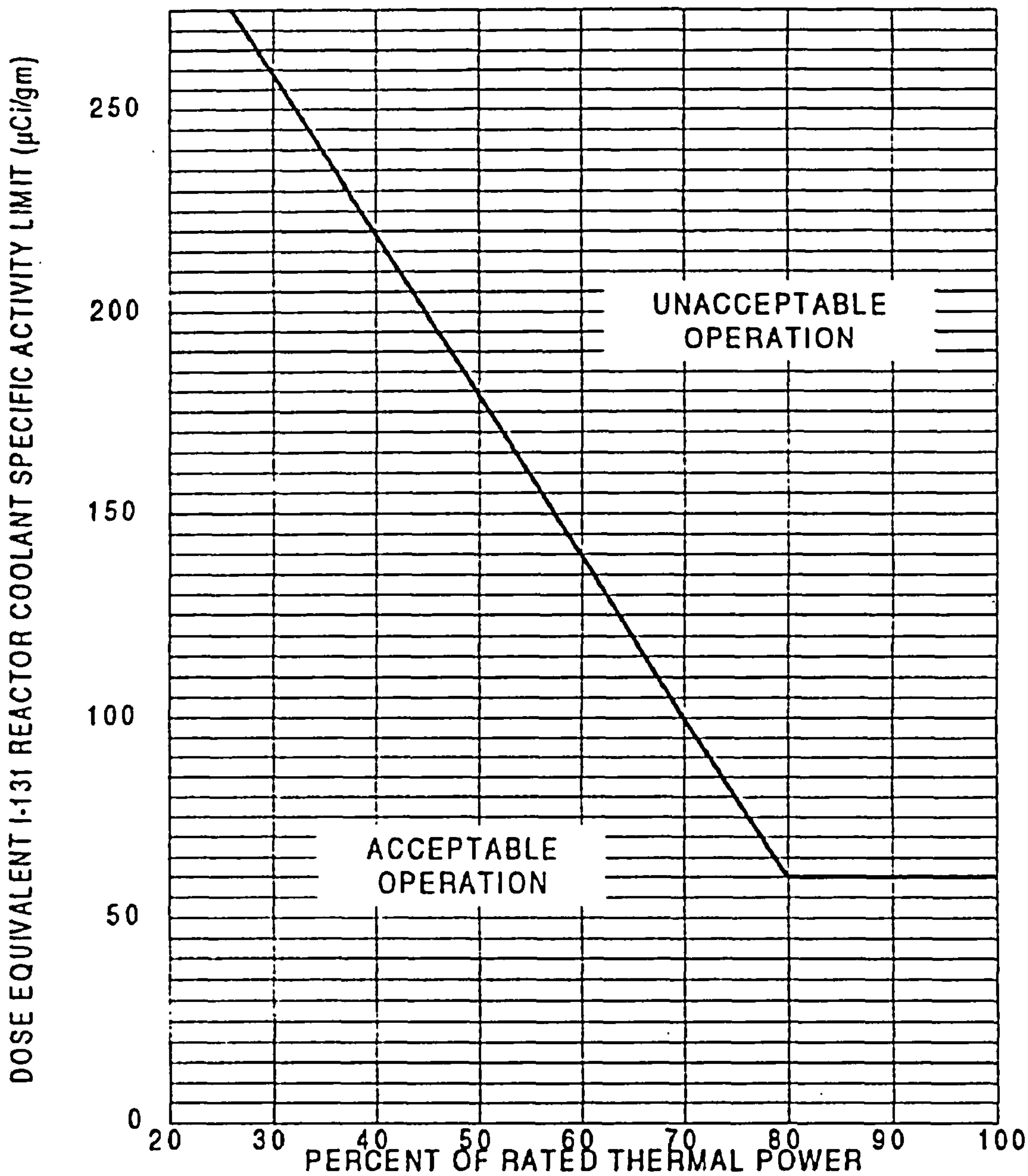

Figure 3.4.15-1 (page 1 of 1)
Reactor Coolant DOSE EQUIVALENT I-131 Specific Activity Limit Versus Percent of RATED THERMAL POWER With Reactor Coolant Specific Activity >1.0 μCi/gm DOSE EQUIVALENT I-131

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 Steam Generator (OTSG) Tube Integrity

LCO 3.4.16 OTSG tube integrity shall be maintained.

AND

All OTSG tubes satisfying the tube repair criteria shall be plugged in accordance with the Steam Generator Program.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each OTSG tube.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more OTSG tubes satisfying the tube repair criteria and not plugged in accordance with the Steam Generator Program.	A.1 Verify tube integrity of the affected tube(s) is maintained until the next refueling outage or OTSG tube inspection.	7 days
	AND	
	A.2 Plug the affected tube(s) in accordance with the Steam Generator Program.	Prior to entering MODE 4 following the next refueling outage or OTSG tube inspection
B. Required Action and associated Completion Time of Condition A not met. OR OTSG tube integrity not maintained.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 Verify OTSG tube integrity in accordance with the Steam Generator Program.	In accordance with the Steam Generator Program
SR 3.4.16.2 Verify that each inspected OTSG tube that satisfies the tube repair criteria is plugged in accordance with the Steam Generator Program.	Prior to entering MODE 4 following a OTSG tube inspection

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Core Flood Tanks (CFTs)

LCO 3.5.1 Two CFTs shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with Reactor Coolant System (RCS) pressure $\geq$ 750 psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CFT inoperable due to boron concentration not within limits.	A.1 Restore boron concentration to within limits.	72 hours
B. CFT inoperable for reasons other than Condition A. <u>OR</u> Two CFTs inoperable.	B.1 Restore CFT(s) to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Reduce RCS pressure to $\leq$ 750 psig.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each CFT isolation valve is fully open.	12 hours
SR 3.5.1.2	Verify borated water volume in each CFT is ≥ 7255 gallons and ≤ 8005 gallons.	12 hours
SR 3.5.1.3	Verify nitrogen cover pressure in each CFT is ≥ 577 psia and ≤ 653 psia.	12 hours
SR 3.5.1.4	Verify boron concentration in each CFT is ≥ 2270 ppm and ≤ 3500 ppm.	31 days AND -----NOTE------ Only required to be performed for affected CFT --------------- Once within 6 hours after each solution volume increase of ≥ 80 gallons that is not the result of addition from the borated water storage tank

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5	Verify power is removed from each CFT isolation valve operator.	31 days

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS – Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Low Pressure Injection (LPI) subsystem inoperable.	A.1 Restore LPI subsystem to OPERABLE status.	7 days
B. One or more trains inoperable for reasons other than Condition A. <u>AND</u> At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	B.1 Restore train(s) to OPERABLE status.	72 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.2.2	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.5.2.3	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.5.2.4	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.5.2.5	Verify the following valves in the HPI flow path are locked, sealed or otherwise secured in the correct position: a. MUV-2; b. MUV-6; c. MUV-10; d. MUV-590; e. MUV-591; f. MUV-592; and g. MUV-593.	24 months

(continued)

-shall be implemented prior to commencing Cycle 12 operation

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.6	Verify the flow controllers for the following LPI throttle valves operate properly: a. DHV-110 b. DHV-111	24 months
SR 3.5.2.7	Verify, by visual inspection, each ECCS train reactor building emergency sump suction inlet is not restricted by debris and suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.	24 months

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 ECCS–Shutdown

LCO 3.5.3 One ECCS train shall be OPERABLE.

---------------------------NOTE---------------------------
High pressure injection (HPI) may be deactivated in accordance with LCO 3.4.11, "Low Temperature Overpressure Protection (LTOP) System."

APPLICABILITY: MODE 4.

ACTIONS

---------------------------NOTE---------------------------
LCO 3.0.4.b is not applicable to ECCS LPI loops.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Required low pressure injection (LPI) subsystem inoperable.	A.1	Initiate action to restore required LPI subsystem to OPERABLE status.	Immediately
B. Required HPI subsystem inoperable.	B.1	Restore required HPI subsystem to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 5.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	-----------------NOTE----------------- An LPI subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually re-aligned to the ECCS mode of operation. -- For all equipment required to be OPERABLE; the following SRs are applicable. SR 3.5.2.1 SR 3.5.2.6 SR 3.5.2.2 SR 3.5.2.7 SR 3.5.2.5	In accordance with applicable SRs

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 Borated Water Storage Tank (BWST)

LCO 3.5.4 The BWST shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. BWST boron concentration not within limits. OR BWST water temperature not within limits.	A.1 Restore BWST to OPERABLE status.	8 hours
B. BWST inoperable for reasons other than Condition A.	B.1 Restore BWST to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.4.1	--------------------NOTE-------------------- Only required to be performed when ambient air temperature is < 40°F or > 100°F. --- Verify BWST borated water temperature is ≥ 40°F and ≤ 100°F.	24 hours
SR 3.5.4.2	Verify BWST borated water volume is ≥ 415,200 gallons and ≤ 449,000 gallons.	7 days
SR 3.5.4.3	Verify BWST boron concentration is ≥ 2270 ppm and ≤ 3000 ppm.	31 days <u>AND</u> Once within 12 hours after each solution volume increase of ≥ 4000 gallons

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment

LCO 3.6.1 Containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program. The maximum allowable leakage rate, L_a, is 0.25% of containment air weight per day at the calculated peak containment pressure, P_a.	In accordance with the Containment Leakage Rate Testing Program.
SR 3.6.1.2	Verify containment structural integrity in accordance with ITS 5.6.2.8.	In accordance with the Containment Inspection Program

3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks

LCO 3.6.2 Two containment air locks shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

------------------------------------NOTES------------------------------------

1. Entry and exit is permissible to perform repairs on the affected air lock components or for emergencies involving personnel safety.
2. Separate Condition entry is allowed for each air lock.
3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when air lock leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment air locks with one air lock door inoperable.	------------NOTES---------- 1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit is permissible for 7 days under adminstrative controls if both air locks are inoperable. -------------------------	
	A.1 Verify the OPERABLE door is closed in the affected air lock. AND	1 hour
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Lock the OPERABLE door closed in the affected air lock. <u>AND</u>	24 hours
	A.3 Verify the OPERABLE door is locked closed in the affected air lock.	Once per 31 days
B. One or more containment air locks with containment air lock interlock mechanism inoperable.	------------NOTES------------ 1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit of containment is permissible under the control of a dedicated individual. -----------------------------	
	B.1 Verify an OPERABLE door is closed in the affected air lock. <u>AND</u>	1 hour
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Lock an OPERABLE door closed in the affected air lock.	24 hours
	<u>AND</u>	
	B.3 Verify an OPERABLE door is locked closed in the affected air lock.	Once per 31 days
C. One or more containment air locks inoperable for reasons other than Condition A or B.	-------------NOTE------------ Successful performance of an overall leakage rate test of the affected air lock may be used to satisfy Required Actions C.1 and C.3 when Condition C is entered as a result of a failure of the door seal leakage rate test. ---------------------------	
	C.1 Initiate action to evaluate overall containment leakage rate.	Immediately
	<u>AND</u>	
	C.2 Verify a door is closed in the affected air lock.	1 hour
	<u>AND</u>	
	C.3 Restore air lock to OPERABLE status.	24 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE FREQUENCY

SURVEILLANCE	FREQUENCY
SR 3.6.2.1 -------------------NOTES------------------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria of SR 3.6.1.1 in accordance with the Containment Leakage Rate Testing Program. --- Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program. The acceptance criteria for air lock testing are: a. Overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$. b. For each door, leakage rate is $\leq 0.01\ L_a$ when tested at ≥ 8.0 psig.	In accordance with the Containment Leakage Rate Testing Program.
SR 3.6.2.2 -------------------NOTE------------------- Only required to be performed when an air lock is used for entry into containment. --- Verify only one door in the air lock can be opened at a time.	184 days

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

-----------------------------------NOTES-----------------------------------

1. Penetration flow paths except for 48 inch purge valve penetration flow paths may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when purge valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITIONS	REQUIRED ACTIONS		COMPLETION TIME
A. --------NOTE--------- Only applicable to penetration flow paths with two containment isolation valves. --------------------- One or more penetration flow paths with one containment isolation valve inoperable (except for 48 inch purge valve leakage not within limit).	A.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	4 hours
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 ---------NOTES--------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by administrative means. ---------------------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. ---------NOTE--------- Only applicable to penetration flow paths with two containment isolation valves or penetration flow paths with one containment isolation valve and no closed system. ---------------------	B.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour
	AND		
One or more penetration flow paths with all containment isolation valves inoperable (except for 48 inch purge valve leakage not within limit).	B.2	--------NOTES-------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by administrative means. ---------------------	
		Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. --------NOTE--------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. --------------------- One or more penetration flow paths with one containment isolation valve inoperable or the closed system breached.	C.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	4 hours
	AND		
	C.2	--------NOTES-------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by administrative means. --------------------- Verify the affected penetration flow path is isolated.	Once per 31 days
D. One or more penetration flow paths with one or more 48 inch containment purge valves not within purge valve leakage limits.	D.1	Restore purge valve leakage to within limits.	24 hours
E. Required Action and associated Completion Time not met.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	Verify each 48 inch purge valve is sealed closed except for one purge valve in a penetration flow path while in Condition D of the LCO.	31 days
SR 3.6.3.2	Verify each 6 inch post accident hydrogen purge valve is closed except when the 6 inch post accident hydrogen purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	31 days
SR 3.6.3.3	--------------------NOTE------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. --- Verify each containment isolation manual valve and blind flange that is located outside containment and is not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	 31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	-------------------NOTE-------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. --- Verify each containment isolation manual valve and blind flange that is located inside containment and is not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days
SR 3.6.3.5	Verify the isolation time of each power operated and each automatic containment isolation valve that is not locked, sealed, or otherwise secured in the isolation position, is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.6	-------------------NOTE------------------- Results shall be evaluated against acceptance criteria of SR 3.6.1.1 in accordance with the Containment Leakage Rate Testing Program. --- Perform leakage rate testing for each 48 inch containment purge valve.	Within 92 days after opening the valve AND 24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.7	------------------NOTE-------------------- Not applicable in MODE 4. -- Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in the isolation position, actuates to the isolation position on an actual or simulated actuation signal.	24 months

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be $\geq$ -2.0 psig and $\leq$ +3.0 psig.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1 Verify containment pressure is $\geq$ -2.0 psig and $\leq$ +3.0 psig.	12 hours

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature

LCO 3.6.5 Containment average air temperature shall be ≤ 130°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment average air temperature not within limit.	A.1 Restore containment average air temperature to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.5.1 Verify containment average air temperature is ≤ 130°F.	24 hours

3.6 CONTAINMENT SYSTEMS

3.6.6 Reactor Building Spray and Containment Cooling Systems

LCO 3.6.6 Two reactor building spray trains and two containment cooling trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One reactor building spray train inoperable.	A.1	Restore reactor building spray train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	84 hours
C. One required containment cooling train inoperable.	C.1	Restore required containment cooling train to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One reactor building spray and one required containment cooling train inoperable.	D.1	Restore reactor building spray train to OPERABLE status.	72 hours
	<u>OR</u>		
	D.2	Restore required containment cooling train to OPERABLE status.	72 hours
E. Two required containment cooling trains inoperable.	E.1	Restore one required containment cooling train to OPERABLE status.	72 hours
F. Required Action and associated Completion Time of Condition C, D, or E not met.	F.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	F.2	Be in MODE 5.	36 hours
G. Two reactor building spray trains inoperable. <u>OR</u> Any combination of three required trains inoperable.	G.1	Enter LCO 3.0.3	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1	Verify each reactor building spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.2	Operate each required containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6.3	Verify each reactor building spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6.4	Verify each required containment cooling train cooling water flow rate is ≥ 1780 gpm.	24 months
SR 3.6.6.5	------------------NOTE-------------------- Not applicable in MODE 4. -- Verify each automatic reactor building spray valve in the flow path that is not locked, sealed, or secured in the correct position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.6.6.6	------------------NOTE-------------------- Not applicable in MODE 4. -- Verify each reactor building spray pump starts automatically on an actual or simulated actuation signal.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.7	-------------------NOTE------------------- Not applicable in MODE 4. -- Verify each required containment cooling train starts automatically on an actual or simulated actuation signal.	24 months
SR 3.6.6.8	Verify each spray nozzle is unobstructed.	Following maintenance that could result in nozzle blockage

3.6 CONTAINMENT SYSTEMS

3.6.7 Containment Emergency Sump pH Control System (CPCS)

LCO 3.6.7 The CPCS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CPCS inoperable.	A.1 Restore CPCS to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.7.1	Verify TSP-C volume is $\geq$ 246 ft^3 and $\leq$ 254 ft^3.	24 months
SR 3.6.7.2	Verify TSP-C density is $\geq$ 53 lb/ft^3.	24 months
SR 3.6.7.3	Verify TSP-C solubility is within limits.	24 months

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 The MSSVs shall be OPERABLE as specified in Table 3.7.1-1.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-------------------------------------NOTE-------------------------------------
Separate Condition entry is allowed for each MSSV.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required MSSVs inoperable.	A.1 Reduce THERMAL POWER to less than the reduced power (RP) limit of Table 3.7.1-1.	4 hours
	<u>AND</u>	
	A.2 Reduce the nuclear overpower trip setpoint (SP) in accordance with Table 3.7.1-1.	12 hours
B. Required Action and associated Completion Time not met. <u>OR</u> No OPERABLE MSSV on one or more steam generators with a nominal lift setpoint of 1050 psig.	B.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	B.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	-------------------NOTE-------------------- Only required to be performed in MODES 1 and 2. --- Verify each required MSSV lift setpoint in accordance with the Inservice Testing Program. Valves removed for testing shall be reset to ±1% of the nominal setpoint.	In accordance with the Inservice Testing Program

Table 3.7.1-1 (page 1 of 1)
MSSV OPERABILITY Requirements

A. Two MSSVs per OTSG shall be OPERABLE with a nominal lift setpoint of 1050 psig.

B. Maximum nominal MSSV lift setpoint shall be $\leq$ 1100 psig.

C. Allowed THERMAL POWER and Nuclear Overpower Trip Setpoint versus OPERABLE Main Steam Safety Valves.

$$RP = \frac{Y}{Z} \times 100\% \qquad SP = \frac{Y}{Z} \times W$$

SP = Nuclear overpower trip setpoint (not to exceed W).

RP = Reduced power requirement (not to exceed RTP).

W = Nuclear overpower trip setpoint for four pump operation as specified in Table 3.3.1-1.

Y = Total OPERABLE MSSV relieving capacity per steam generator based on summation of individual OPERABLE MSSV relief capacities per steam generator (lb/hour).

Z = Required relieving capacity per steam generator of 6,160,000 lb/hour.

D. Maximum allowable tolerance on lift setpoints is $\pm$ 3%.

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 Each MSIV shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

------------------------------------NOTE------------------------------------
Enter applicable Conditions and Required Actions for Turbine Bypass Valves (TBVs) made inoperable by MSIV(s).

CONDITION	REQUIRED ACTION	COMPLETION TIME
-----------NOTE----------- Separate Condition entry is allowed for each MSIV. ------------------------- A. One or more MSIV inoperable on one steam generator.	A.1 Close inoperable MSIV(s). AND A.2 Verify inoperable MSIV(s) is closed.	8 hours Once per 7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	-------------------NOTE------------------- Only required to be performed in MODES 1 and 2. -- Verify closure time of each MSIV is in accordance with the Inservice Testing Program.	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs)

LCO 3.7.3 Two MFIVs in each MFW flow path shall be OPERABLE with at least one MFIV capable of isolating MFW within the required isolation time.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

------------------------------------NOTES------------------------------------

1. Separate Condition entry is allowed for each MFW flow path.

2. MFW flow paths may be unisolated under administrative control.

3. Operation with affected MFW flow paths isolated shall not result in isolation of the MFW startup flow path for more than 72 hours.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MFW flow paths with one MFIV inoperable.	A.1 Isolate affected flow path(s).	72 hours
	AND	
	A.2 Verify affected flow path(s) is isolated.	Once per 7 days
B. One or more MFW flow paths not capable of isolating within required isolation time.	B.1 Isolate affected flow path(s).	24 hours
	AND	
	B.2 Verify affected flow path(s) is isolated.	Once per 7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more MFW flow paths with two MFIVs inoperable.	C.1 Isolate affected flow path(s).	8 hours
D. One or more MFW flow paths with the MFW start-up block valve inoperable.	D.1 Restore MFIV(s) to OPERABLE status.	72 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. <u>AND</u> E.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	--------------------NOTE-------------------- Only required to be performed in MODES 1 and 2. --- Verify MFIV closure time in accordance with the Inservice Testing Program.	In accordance with the Inservice Testing Program

3.7 PLANT SYSTEMS

3.7.4 Turbine Bypass Valves (TBVs)

LCO 3.7.4 Each TBV shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more TBVs inoperable.	A.1 Restore TBV(s) to OPERABLE status.	7 days
	OR	
	A.2 Verify by administrative means OPERABILITY of associated steam generator atmospheric dump valve (ADV).	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.4.1 Perform one complete cycle of each TBV.	24 months

3.7 PLANT SYSTEMS

3.7.5 Emergency Feedwater (EFW) System

LCO 3.7.5 Two EFW trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3.

ACTIONS

-----------------------------------NOTE-----------------------------------
LCO 3.0.4.b is not applicable when entering MODE 1.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One steam supply to the turbine driven EFW pump inoperable.	A.1 Restore steam supply to OPERABLE status.	7 days
B. One EFW train inoperable for reasons other than Condition A.	B.1 Restore EFW train to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in Mode 3. AND C.2 Be in Mode 4.	6 hours 12 hours
D. Two EFW trains inoperable.	D.1 Initiate action to restore one EFW train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	Verify each EFW manual, power operated, and automatic valve in each water flow path, in both steam supply flow paths to the turbine driven pump, and starting air and fuel oil flow path for the diesel driven EFW pump that is not locked, sealed, or otherwise secured in position, is in the correct position.	45 days
SR 3.7.5.2	---------------NOTE--------------- Not required to be performed for the turbine driven EFW pump, until 24 hours after entering MODE 3. ---------------------------------- Verify the developed head of each EFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.5.3	-------------------NOTE------------------- Not required to be performed until 24 hours after entering MODE 3. -- Verify each EFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.7.5.4	-------------------NOTE------------------- Not required to be performed until 24 hours after entering MODE 3. -- Verify each EFW pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.7.5.5	Verify proper alignment of the EFW flow paths by verifying flow from the EFW tank to each steam generator.	Prior to entering MODE 2 whenever plant has been in MODE 5 or 6 for > 30 days
SR 3.7.5.6	Verify adequate battery terminal voltage.	7 days

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License Amendment No, 182

dated

August 11, 1999

3.7 PLANT SYSTEMS

3.7.6 Emergency Feedwater (EFW) Tank

LCO 3.7.6 EFW tank water volume shall be ≥ 150,000 gal.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. EFW tank water volume not within limit.	A.1	Verify by administrative means OPERABILITY of backup water supply.	4 hours AND Once per 12 hours thereafter
	AND		
	A.2	Restore EFW tank water volume to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify EFW tank water volume is ≥ 150,000 gal.	7 days

3.7 PLANT SYSTEMS

3.7.7 Nuclear Services Closed Cycle Cooling Water (SW) System

LCO 3.7.7 The SW System shall be OPERABLE with:

a. Two OPERABLE emergency SW pumps; and

b. Three OPERABLE SW heat exchangers

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One emergency SW pump inoperable.	A.1 Restore SW system to OPERABLE status	72 hours
B. One required SW heat exchanger inoperable.	B.1 Restore SW system to OPERABLE status	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	-------------------NOTE------------------- Isolation of SW flow to individual components does not render the SW System inoperable. -- Verify each SW manual, power operated, and automatic valve in the flow path servicing essential equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.7.2	-------------------NOTE------------------- Not applicable in MODE 4. -- Verify each SW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.7.7.3	-------------------NOTE------------------- Not applicable in MODE 4. -- Verify each SW pump starts automatically on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.8 Decay Heat Closed Cycle Cooling Water (DC) System

LCO 3.7.8 Two DC trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One DC train inoperable.	A.1	------NOTE----------- Enter applicable Conditions and Required Actions of LCO 3.4.5, "RCS Loops-MODE 4," for required decay heat removal loops made inoperable by DC train inoperability. --------------------- Restore DC train to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in Mode 3	6 hours
	<u>AND</u>		
	B.2	Be in Mode 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	------------------NOTE------------------ Isolation of DC flow to individual components does not render the DC System inoperable. -- Verify each DC manual and power operated valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.8.2	------------------NOTE------------------ Not applicable in MODE 4. -- Verify each DC pump starts automatically on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.9 Nuclear Services Seawater System

LCO 3.7.9 Two Nuclear Services Seawater System trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Nuclear Services Seawater System train inoperable.	A.1 Restore Nuclear Services Seawater System train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in Mode 3 AND B.2 Be in Mode 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	-------------------NOTE------------------- Isolation of Nuclear Services Seawater System flow to individual components does not render the Nuclear Services Seawater System inoperable. -- Verify each Nuclear Services Seawater System manual valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.9.2	-------------------NOTE------------------- Not applicable in MODE 4. -- Verify each Emergency Nuclear Services Seawater System pump starts automatically on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.10 Decay Heat Seawater System

LCO 3.7.10 Two Decay Heat Seawater System trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One Decay Heat Seawater System train inoperable.	A.1	---------NOTE--------- Enter applicable Conditions and Required Actions of LCO 3.4.5, "RCS Loops-MODE 4," for required decay heat removal loops made inoperable by Decay Heat Seawater System train inoperability. --------------------- Restore Decay Heat Seawater System train to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in Mode 3	6 hours
	<u>AND</u>		
	B.2	Be in Mode 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Verify each Decay Heat Seawater System manual valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.10.2	-------------------NOTE-------------------- Not applicable in MODE 4. --- Verify each Decay Heat Seawater System pump starts automatically on an actual or simulated actuation signal.	24 months

3.7 PLANT SYSTEMS

3.7.11 Ultimate Heat Sink (UHS)

LCO 3.7.11 The UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. UHS inoperable.	A.1 Be in MODE 3. AND A.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.11.1 Verify water level of UHS is $\geq$ 79 ft. plant datum.	24 hours
SR 3.7.11.2 Verify average water temperature of UHS is $\leq$ 95°F.	24 hours

3.7 PLANT SYSTEMS

3.7.12 Control Room Emergency Ventilation System (CREVS)

LCO 3.7.12 Two CREVS trains shall be OPERABLE.

-----------------------------NOTE-----------------------------
The control complex habitability envelope (CCHE) boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREVS train inoperable for reasons other than Condition B.	A.1 Restore CREVS train to OPERABLE status.	7 days
B. One or more CREVS trains inoperable due to inoperable CCHE boundary.	B.1 Initiate action to implement mitigating actions.	Immediately
	<u>AND</u>	
	B.2 Verify mitigating actions ensure CCHE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	<u>AND</u>	
	B.3 Restore CCHE boundary to OPERABLE status.	90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours
D. Two CREVS trains inoperable for reasons other than Condition B.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Operate each CREVS train for ≥ 15 minutes.	31 days
SR 3.7.12.2	Perform required CREVS filter testing in accordance with the Ventilation Filter Testing Program.	In accordance with the Ventilation Filter Testing Program
SR 3.7.12.3	Verify each CREVS train actuates to the emergency recirculation mode on an actual or simulated actuation signal.	24 months
SR 3.7.12.4	Perform required CCHE unfiltered air in-leakage testing in accordance with the Control Complex Habitability Envelope Integrity Program.	In accordance with the Control Complex Habitability Envelope Integrity Program

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3.7 PLANT SYSTEMS

3.7.13 Fuel Storage Pool Water Level

LCO 3.7.13 The fuel storage pool water level shall be ≥ 156 ft Plant Datum.

APPLICABILITY: During movement of irradiated fuel assemblies in fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool water level not within limit.	A.1 ---------NOTE--------- LCO 3.0.3 is not applicable. --------------------- Suspend movement of irradiated fuel assemblies in fuel storage pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Verify the fuel storage pool water level is ≥ 156 ft Plant Datum.	7 days

3.7 PLANT SYSTEMS

3.7.14 Spent Fuel Pool Boron Concentration

LCO. 3.7.14 The spent fuel pool boron concentration shall be ≥1925 ppm.

APPLICABILITY: When fuel assemblies are stored in the spent fuel pool and a spent fuel pool verification has not been performed since the last movement of fuel assemblies in the spent fuel pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent fuel pool boron concentration not within limit.	------------NOTE------------ LCO 3.0.3 is not applicable. ----------------------------	
	A.1 Suspend movement of fuel assemblies in the spent fuel pool.	Immediately
	<u>AND</u>	
	A.2.1 Initiate action to restore spent fuel pool boron concentration to within limit.	Immediately
	<u>OR</u>	
	A.2.2 Verify by administrative means a Storage Pool A and Storage Pool B spent fuel pool verification has been performed since the last movement of fuel assemblies in the spent fuel pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Verify the spent fuel pool boron concentration is $\geq$ 1925 ppm.	7 days

3.7 PLANT SYSTEMS

3.7.15 Spent Fuel Assembly Storage

LCO 3.7.15 The combination of initial enrichment and burnup of each spent fuel assembly stored in Storage Pool A and Storage Pool B, shall be within the acceptable region of Figure 3.7.15-1 or Figure 3.7.15-2.

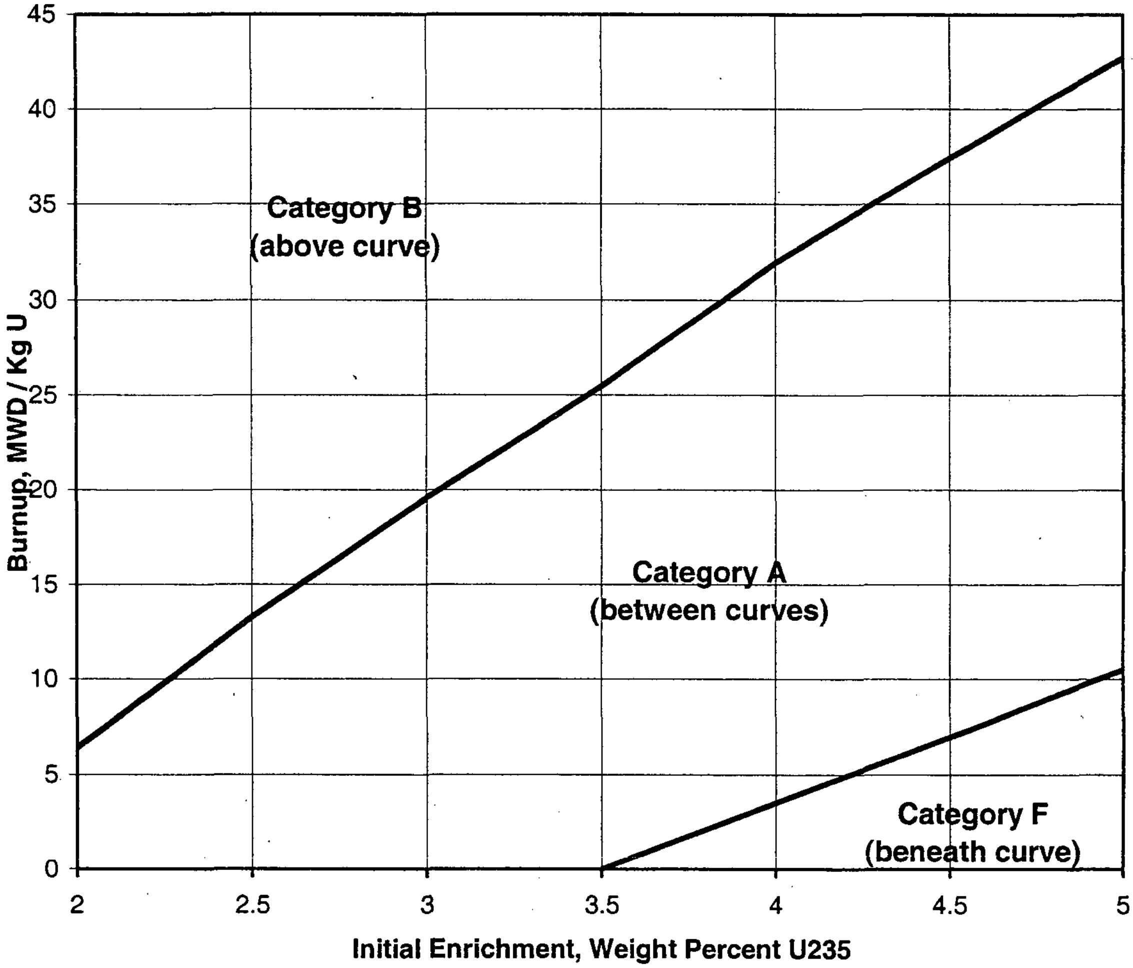
APPLICABILITY: Whenever any fuel assembly is stored in Storage Pool A or Storage Pool B of the spent fuel pool.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Requirements of the LCO not met.	A.1	---------NOTE-------- LCO 3.0.3 is not applicable. --------------------- Initiate action to move the noncomplying fuel assembly to an acceptable configuration.	Immediately

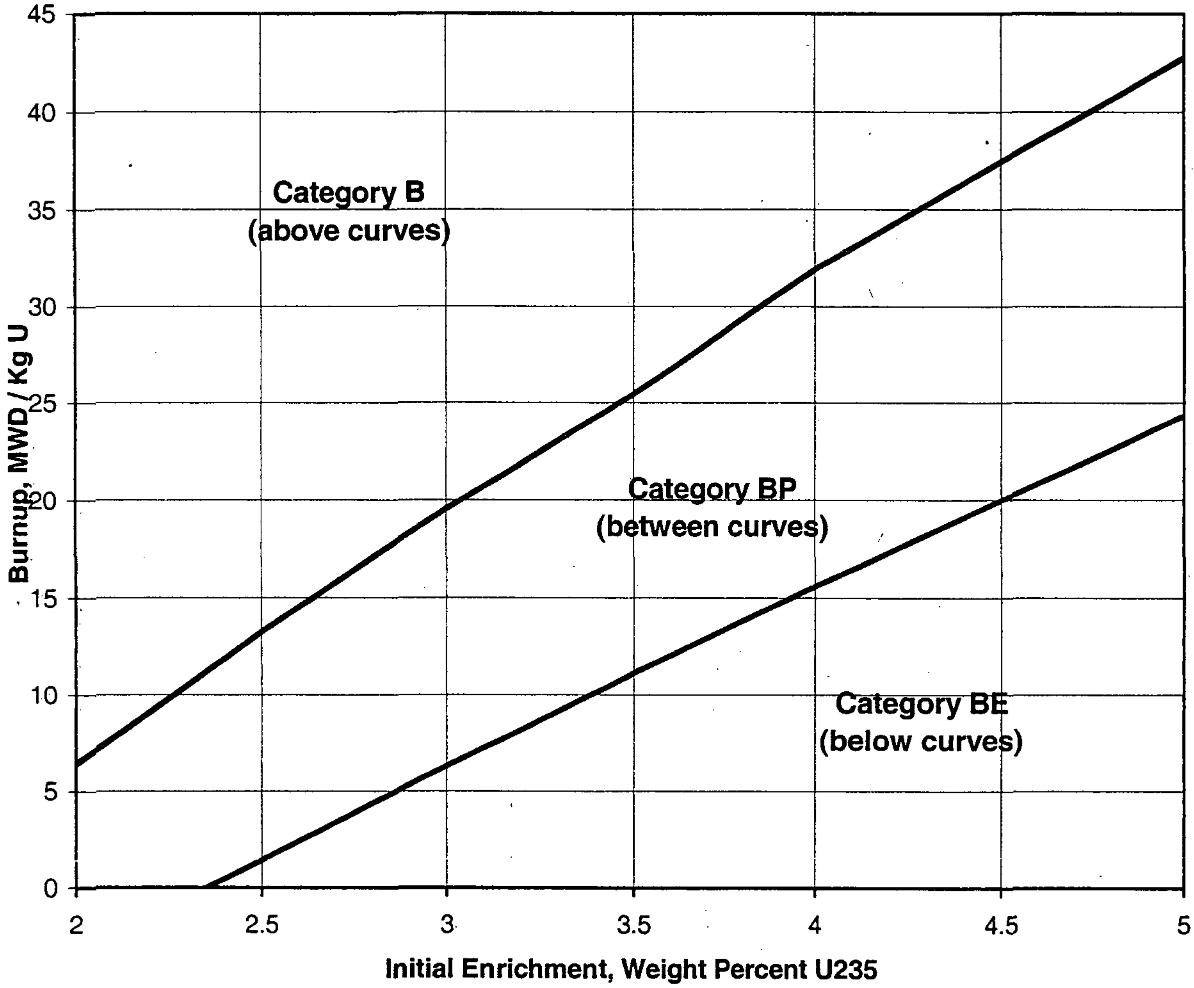
SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.15.1	Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with Figure 3.7.15-1 or Figure 3.7.15-2.	Prior to storing the fuel assembly in Storage Pool A or Storage Pool B.



1. Category B: Fuel from this category can be stored with no restrictions except as noted below.
2. Category A: Fuel from this category can be stored with fuel from Categories A or B.
3. Category F: Fuel from this category must be stored in a one-out-of-two checkerboard configuration with fuel from Category B or empty water cells. Category F fuel stored in a checkerboard pattern with either Category B fuel or empty water cells must be separated from Category A fuel by a transition row of Category B fuel.

Figure 3.7.15-1
Burnup versus Enrichment Curve for
Spent Fuel Storage Pool A



1. Category B: Fuel from this category can be stored with no restrictions except as noted below.
2. Category BP: Fuel from this category (between lower and upper curves) can be stored in the peripheral cells of the pool.
3. Category BE: Unacceptable for storage unless surrounded by eight empty water cells.
4. Fuel of any enrichment and burnup including fresh, unburned fuel may be stored in Pool B if surrounded by eight empty water cells. Category BE fuel assemblies must be separated by two adjacent empty cells in Pool B.

Figure 3.7.15-2
Burnup versus Enrichment Curve for
Spent Fuel Storage Pool B

3.7 PLANT SYSTEMS

3.7.16 Secondary Specific Activity

LCO 3.7.16 The specific activity of the secondary coolant shall be $\leq$ 4.5E-4 μCi/gm DOSE EQUIVALENT I-131.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Specific activity not within limit.	A.1 Be in MODE 3. AND A.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.16.1 Verify the specific activity of the secondary coolant is $\leq$ 4.5E-4 μCi/gm DOSE EQUIVALENT I-131.	31 days

3.7 PLANT SYSTEMS

3.7.17 Steam Generator Level

LCO 3.7.17 Water level in each steam generator shall be less than or equal to the maximum allowable water level shown in Figure 3.7.17-1.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Water level in one or more steam generators greater than maximum allowable water level in Figure 3.7.17-1.	A.1 Restore steam generator level to within limit.	15 minutes
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.17.1 Verify steam generator water level is less than or equal to the maximum allowable water level in Figure 3.7.17-1.	12 hours

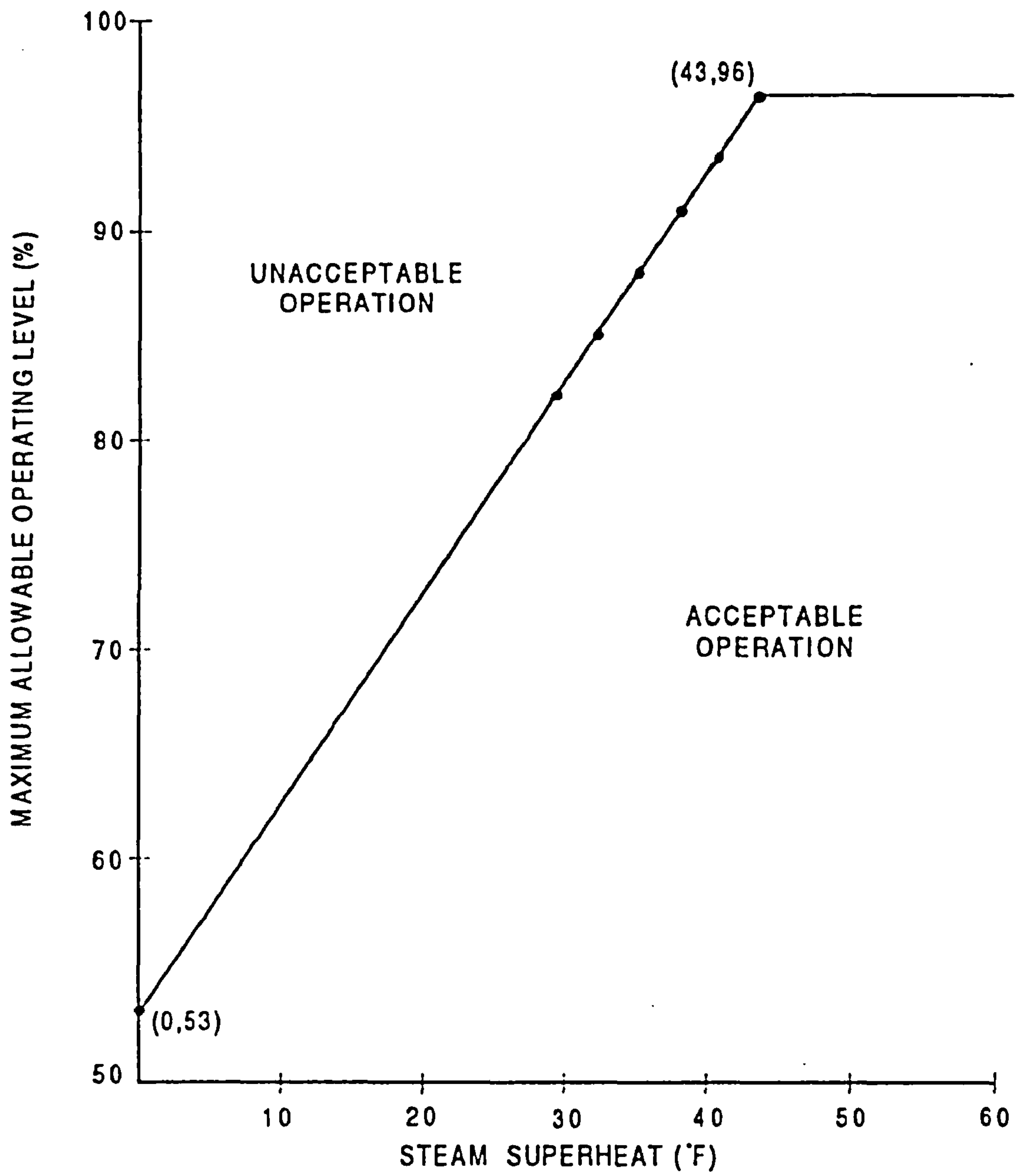


Figure 3.7.17-1 (page 1 of 1)
Maximum Allowable Steam Generator Level

3.7 PLANT SYSTEMS

3.7.18 Control Complex Cooling System

LCO 3.7.18 Two Control Complex Cooling trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION
A. One or more trains inoperable. AND At least 100% of the cooling capability of a single OPERABLE Control Complex Cooling train available.	A.1 Ensure adequate cooling capability from the Control Complex Cooling system in operation. AND A.2 Restore Control Complex Cooling trains(s) to OPERABLE status.	Immediately 7 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in Mode 3. AND B.2 Be in Mode 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.18.1	Verify each chilled water pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.7.18.2	Verify the redundant capability of the Control Complex Cooling System to remove the assumed heat load.	24 months

3.7 PLANT SYSTEMS

3.7.19 Diesel Driven EFW (DD-EFW) Pump Fuel Oil, Lube Oil and Starting Air

LCO 3.7.19 The stored diesel fuel oil, lube oil, and starting air subsystems shall be within limits for the DD-EFW Pump.

APPLICABILITY: When the associated DD-EFW Pump is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. DD-EFW Pump fuel oil storage tank level < 9,580 gal and > 8,435 gal.	A.1	Restore fuel oil level to within limits.	48 hours
B. With stored DD-EFW Pump diesel lube oil inventory < 207 gal and > 178 gal.	B.1	Restore stored lube oil inventory to within limits.	48 hours
C. DD-EFW Pump with stored fuel oil total particulates not within limits.	C.1	Restore fuel oil total particulates to within limits.	7 days
D. DD-EFW Pump with new fuel oil properties not within limits.	D.1	Restore stored fuel oil properties to within limits.	30 days
E. DD-EFW Pump with starting air receiver pressure < 177 psig and > 150 psig.	E.1	Restore starting air receiver pressure to within limits.	48 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required ACTION and associated Completion Time not met. OR For DD-EFW Pump fuel oil, lube oil or starting air subsystems not within limits for reasons other than Conditions A, B, C, D or E.	F.1 Declare DD-EFW Pump inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.19.1	Verify DD-EFW Pump fuel oil storage tank contains ≥ 9,580 gal of fuel.	31 days
SR 3.7.19.2	Verify DD-EFW Pump stored lube oil inventory is ≥ 207 gal.	31 days
SR 3.7.19.3	Verify DD-EFW Pump fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of the Diesel Fuel Oil Testing program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.7.19.4	Verify DD-EFW Pump starting air receiver pressure is ≥ 177 psig.	31 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources-Operating

LCO 3.8.1 The following AC electrical power sources shall be OPERABLE:

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; and

b. Two emergency diesel generators (EDGs) each capable of supplying one train of the onsite Class 1E AC Electrical Power Distribution System.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

-----------------------------------NOTE-----------------------------------
LCO 3.0.4.b is not applicable to EDGs.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required offsite circuit inoperable.	A.1	Perform SR 3.8.1.1 for OPERABLE required offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND		
	A.2	Declare required feature(s), with no offsite power available, inoperable when its redundant required feature(s) are inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.3	Restore required offsite circuit to OPERABLE status	72 hours
B. One EDG inoperable.	B.1	Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	B.2	Declare required feature(s), supported by the inoperable EDG, inoperable when its redundant required feature(s) are inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND		
			(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3.1 Determine OPERABLE EDG is not inoperable due to common cause failure. OR B.3.2 Perform SR 3.8.1.2 for OPERABLE EDG. AND B.4 Restore EDG to OPERABLE status	24 hours 24 hours 72 hours OR 14 days if alternate AC power is available

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two required offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when its redundant required feature(s) are inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s)
	AND	
	C.2 Restore one required offsite circuit to OPERABLE status.	24 hours
D. One required offsite circuit inoperable. AND One EDG inoperable.	-----------NOTE------------ Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems Operating," when Condition D is entered with no AC power source to one train. ---------------------------	
	D.1 Restore required offsite circuit to OPERABLE status.	12 hours
	OR	
	D.2 Restore EDG to OPERABLE status.	12 hours
E. Two EDGs inoperable.	E.1 Restore one EDG to OPERABLE status.	2 hours
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3.	12 hours
	AND	
	F.2 Be in MODE 5.	36 hours
G. Three or more required AC sources inoperable.	G.1 Enter LCO 3.0.3	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each required offsite circuit.	7 days
SR 3.8.1.2	----------------NOTES-------------------- 1. Performance of SR 3.8.1.6 satisfies this SR. 2. All EDG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 3. A modified EDG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.6 must be met. 4. When a modified EDG start is used, the required frequency may be obtained automatically or manually or through a combination of the two. --- Verify each EDG starts from standby conditions and achieves steady state voltage ≥ 4077 V and ≤ 4243 V, and frequency ≥ 59.4 Hz and ≤ 60.6 Hz.	 31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	------------------NOTES------------------ 1. EDG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one EDG at a time. 4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.6. --- Verify each EDG operates for ≥ 60 minutes at a load ≥ 2600 kW and ≤ 2850 kW.	31 days
SR 3.8.1.4	Verify each day tank contains ≥ 280 gal of fuel oil	31 days
SR 3.8.1.5	Verify the fuel oil transfer system operates to automatically transfer fuel oil from the storage tank to the day tank.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.6	-----------------NOTE----------------- All EDG starts may be preceded by an engine prelube period. -- Verify each EDG starts from standby condition and achieves: a. in ≤ 10 seconds voltage ≥ 3744 V and frequency ≥ 58.8 Hz, and b. steady state voltage ≥ 4077 V and ≤ 4243 V and steady state frequency ≥ 59.4 Hz and ≤ 60.6 Hz	184 days
SR 3.8.1.7	Verify manual transfer of AC power sources from the normal offsite circuit to the alternate offsite circuit.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.8	-----------------NOTES----------------- 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. Power factor limit only applicable when Surveillance is performed with EDG paralleled with offsite power. -- Verify each EDG operating at a power factor ≤ 0.9 rejects a load greater than or equal to the single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 66.75 Hz; b. Within 3 seconds following load rejection, the voltage is ≥ 3744 V and ≤ 4576 V; and c. Within 4 seconds following load rejection, the frequency is ≥ 58.8 Hz and ≤ 61.2 Hz.	24 months
SR 3.8.1.9	Verify interval between each sequenced load block is within ± 10% of design interval for each emergency load sequencing relay.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.10	----------------NOTES---------------- 1. All EDG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODES 1, 2 or 3. However, credit may be taken for unplanned events that satisfy this SR. 3. Only required to be performed prior to entry into MODE 3. -------------------------------------	
	Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ES actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. EDG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through load sequencing relays, 3. achieves steady-state voltage ≥ 4077 V and ≤ 4243 V, 4. achieves steady-state frequency ≥ 59.4 Hz and ≤ 60.6 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	-------------------NOTES-------------------- 1. Momentary transients outside the load range do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. --- Verify each EDG operates for ≥ 60 minutes at a load ≥ 3300 kW and ≤ 3400 kW.	24 months

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources—Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems—Shutdown"; and

b. One emergency diesel generator (EDG) capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10.

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required offsite circuit inoperable.	------------NOTE------------ Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A. ----------------------------	
	A.1 Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.2 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately
B. Required EDG inoperable.	B.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	B.2 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>	
	B.3 Initiate action to restore required EDG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	-------------------NOTE------------------- The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.8, and SR 3.8.1.11. -- For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources—Operating," except SR 3.8.1.7, SR 3.8.1.9, and SR 3.8.1.10, are applicable.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil lube oil, and starting air subsystem shall be within limits for each required emergency diesel generator (EDG).

APPLICABILITY: When associated EDG is required to be OPERABLE.

ACTIONS

------------------------------------NOTE------------------------------------

Separate Condition entry is allowed for each EDG.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One EDG with stored fuel oil level < 22,917 gal and > 19,643 gal in storage tank.	A.1 Verify combined stored fuel oil level > 45,834 gal.	1 hour
B. One or more EDGs with stored fuel oil level < 22,917 gal and > 19,643 gal in storage tank. <u>AND</u> Combined stored fuel oil level < 45,834 gal.	B.1 Restore fuel oil level to within limits.	48 hour
C. With stored EDG lube oil inventory < 280 gal and > 240 gal.	C.1 Restore lube oil inventory to within limits.	48 hours <u>OR</u> Declare both EDGs inoperable.

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more EDGs with stored fuel oil total particulates not within limit.	D.1 Restore fuel oil total particulates to within limits.	7 days
E. One or more EDGs with new fuel oil properties not within limits.	E.1 Restore stored fuel oil properties to within limits.	30 days
F. One or more EDGs with starting air receiver pressure < 225 psig and ≥ 160 psig.	F.1 Restore starting air receiver pressure to within limits.	48 hours
G. Required Action and associated Completion Time not met. OR One or more EDGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, E, or F.	G.1 Declare associated EDG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ 22,917 gal of fuel and combined fuel oil storage level ≥ 45,834 gal.	31 days
SR 3.8.3.2	Verify EDG lube oil inventory is ≥ 280 gal.	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each EDG air start receiver pressure is ≥ 225 psig.	31 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources—Operating

LCO 3.8.4 The Train A and Train B DC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DC electrical power subsystem inoperable.	A.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.4.1 Verify battery terminal voltage is ≥ 125/250 V on float charge.	7 days

(continued)

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.2	Verify no visible corrosion at battery terminals and connectors. OR Verify battery connection resistance is maintained such that the voltage drop at the maximum expected service discharge current is ≤ 25 mV for inter-cell connections, ≤ 80 mV for inter-rack connections, ≤ 80 mV for inter-tier connections, and ≤ 25 mV for terminal connections.	92 days
SR 3.8.4.3	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration.	18 months
SR 3.8.4.4	Verify battery cell to cell and terminal connections are coated with anti-corrosion material.	18 months
SR 3.8.4.5	Verify battery connection resistance is maintained such that the voltage drop at the maximum expected service discharge current is ≤ 25 mV for inter-cell connections, ≤ 80 mV for inter-rack connections, ≤ 80 mV for inter-tier connections, and ≤ 25 mV for terminal connections.	18 months
SR 3.8.4.6	Verify each battery charger supplies ≥ 190 amps at ≥ 125 V for ≥ 8 hours.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.7	-------------------NOTES------------------ 1. The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7 once per 60 months. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. -- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	-------------------NOTE------------------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. -- Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months <u>AND</u> 12 months when battery shows degradation or has reached 85% of the expected life with capacity < 100% of manufacturer's rating <u>AND</u> 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources—Shutdown

LCO 3.8.5 DC electrical power subsystem(s) shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems—Shutdown."

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC electrical power subsystems inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.5.1	-------------------NOTE------------------- The following SRs are not required to be performed: SR 3.8.4.6, SR 3.8.4.7, and SR 3.8.4.8. -- For DC subsystems required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1 SR 3.8.4.4 SR 3.8.4.7 SR 3.8.4.2 SR 3.8.4.5 SR 3.8.4.8. SR 3.8.4.3 SR 3.8.4.6	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

LCO 3.8.6 Battery cell parameters for the Train A and Train B batteries shall be within the limits of Table 3.8.6-1.

APPLICABILITY: When associated DC electrical power subsystems are required to be OPERABLE.

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each battery.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more batteries with one or more required battery cell parameters not within limits.	A.1 Verify pilot cell(s) electrolyte level and float voltage meet Table 3.8.6-1 Category C values.	1 hour
	<u>AND</u>	
	A.2 Verify required battery cell parameters meet Table 3.8.6-1 Category C values.	24 hours
	<u>AND</u>	
	A.3 Restore required battery cell parameters to Category A and B limits of Table 3.8.6-1.	31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> One or more batteries with average electrolyte temperature of the representative cells < 70°F. <u>OR</u> One or more batteries with one or more required battery cell parameters not within Category C values.	B.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.6.1 Verify required battery cell parameters meet Table 3.8.6-1 Category A limits.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.2	Verify required battery cell parameters meet Table 3.8.6-1 Category B limits.	92 days AND Once within 24 hours after a battery discharge < 105 V AND Once within 24 hours after a battery overcharge > 150 V
SR 3.8.6.3	Verify average electrolyte temperature of representative cells is ≥ 70°F.	92 days

Table 3.8.6-1 (page 1 of 1)
Battery Cell Surveillance Requirements

PARAMETER	CATEGORY A: LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: LIMITS FOR EACH CONNECTED CELL	CATEGORY C: ALLOWABLE VALUE FOR EACH CONNECTED CELL
Electrolyte Level	> Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark[(a)]	> Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark[(a)]	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 V	≥ 2.13 V	> 2.07 V
Specific Gravity[(b)(c)]	≥ 1.200	≥ 1.195 AND Average of all connected cells > 1.205	Not more than 0.020 below average connected cells AND Average of all connected cells ≥ 1.195

(a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum during equalizing charges provided it is not overflowing.

(b) Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 2 amps when on float charge.

(c) A battery charging current of < 2 amps when on float charge is acceptable for meeting specific gravity Surveillance Requirements. For Category C allowable values, this is acceptable only during a maximum of 7 days following a battery recharge. For Category A and B limits, this is acceptable for a maximum of 31 days.

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters—Operating

LCO 3.8.7 Two Train A and two Train B inverters shall be OPERABLE.

----------------------------NOTE----------------------------
Two inverters may be disconnected from their associated DC bus for ≤ 24 hours to perform an equalizing charge on their associated common battery, provided:

a. The associated AC vital buses are energized; and

b. Both AC vital buses for the other train are energized from their associated OPERABLE inverters.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two inverters on one train inoperable.	------------NOTE------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems-Operating," when any AC vital bus is de-energized. -----------------------------	
	A.1 Restore inverter(s) to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct inverter voltage, frequency, and alignment to required AC vital buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters—Shutdown

LCO 3.8.8 Inverters shall be OPERABLE to support the onsite Class 1E AC vital bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems—Shutdown."

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required inverters inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	
	A.2.3 Initiate action to restore required inverters to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify correct inverter voltage, frequency, and alignments to required AC vital buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems-Operating

LCO 3.8.9 Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One AC electrical power distribution subsystem inoperable.	A.1 Restore AC electrical power distribution subsystem to OPERABLE status.	8 hours
B. One AC vital bus subsystem inoperable.	B.1 Restore AC vital bus subsystem to OPERABLE status.	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One DC electrical power distribution subsystem inoperable.	C.1 Restore DC electrical power distribution subsystem to OPERABLE status.	2 hours
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours
E. Two trains with inoperable distribution subsystems that result in a loss of function.	E.1 Enter LCO 3.0.3	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems—Shutdown

LCO 3.8.10 The necessary portion of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or AC vital bus electrical power distribution subsystems inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.3 Initiate actions to restore required AC, DC, and AC vital bus electrical power distribution subsystems to OPERABLE status.	Immediately
	AND	
	A.2.4 Declare associated required decay heat removal (DHR) loop inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.10.1 Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems.	7 days

3.9 REFUELING OPERATIONS

3.9.1 Boron Concentration

LCO 3.9.1 Boron concentrations of the Reactor Coolant System and the refueling canal shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Boron concentration not within limit.	A.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2 Suspend positive reactivity additions.	Immediately
	AND	
	A.3 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.1.1 Verify boron concentration is within the limit specified in the COLR.	72 hours

3.9 REFUELING OPERATIONS

3.9.2 Nuclear Instrumentation

LCO 3.9.2 Two source range neutron flux monitors shall be OPERABLE.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required source range neutron flux monitor inoperable.	A.1	Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>		
	A.2	Suspend positive reactivity additions.	Immediately
B. Two required source range neutron flux monitors inoperable.	B.1	Initiate action to restore one source range neutron flux monitor to OPERABLE status.	Immediately
	<u>AND</u>		
	B.2	Perform SR 3.9.1.1.	4 hours <u>AND</u> Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.2.1	Perform CHANNEL CHECK.	12 hours
SR 3.9.2.2	-------------------NOTE------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION.	24 months

3.9 REFUELING OPERATIONS

3.9.3 Containment Penetrations

LCO 3.9.3 The containment penetrations shall be in the following status:

a. The equipment hatch or outage equipment hatch (OEH) installed and held in place by four bolts;

b. A minimum of one door in each installed air lock and the door in the OEH (if installed) closed; and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:

   1. closed by a manual or automatic isolation valve, blind flange, or equivalent; or

   2. capable of being closed by an OPERABLE containment purge or mini-purge valve.

APPLICABILITY: During movement of recently irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend movement of recently irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Verify each required containment penetration is in the required status.	7 days
SR 3.9.3.2	Verify each required containment purge and mini-purge valve actuates to the isolation position on an actual or simulated actuation signal.	24 months

3.9 REFUELING OPERATIONS

3.9.4 Decay Heat Removal (DHR) and Coolant Circulation—High Water Level

LCO 3.9.4 One DHR loop shall be in operation.

---------------------------NOTE---------------------------
The required DHR loop may be removed from operation for ≤ 1 hour per 8 hour period, provided no operations are permitted that would cause reduction of the Reactor Coolant System boron concentration.

APPLICABILITY: MODE 6 with the refueling canal water level ≥ 156 ft Plant Datum.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. No DHR loop in operation.	A.1	Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	AND		
	A.2	Suspend loading irradiated fuel assemblies in the core.	Immediately
	AND		
	A.3	Initiate action to restore DHR loop to operation.	Immediately
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.4 Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.4.1 Verify required DHR loop is in operation and circulating reactor coolant at a flow rate of ≥ 2700 gpm.	12 hours

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3.9 REFUELING OPERATIONS

3.9.5 Decay Heat Removal (DHR) and Coolant Circulation—Low Water Level

LCO 3.9.5 Two DHR loops shall be OPERABLE and at least one DHR loop shall be in operation.

APPLICABILITY: MODE 6 with the refueling canal water level < 156 ft Plant Datum.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DHR loop inoperable.	A.1 Initiate action to restore DHR loop to OPERABLE status.	Immediately
	<u>OR</u>	
	A.2 Initiate action to establish water level ≥ 156 ft Plant Datum.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. No DHR loop OPERABLE or in operation.	B.1	Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	<u>AND</u>		
	B.2	Initiate action to restore one DHR loop to OPERABLE status and to operation.	Immediately
	<u>AND</u>		
	B.3	Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	Verify required DHR loop is in operation.	12 hours
SR 3.9.5.2	Verify correct breaker alignment and indicated power available to the required DHR pump that is not in operation.	7 days

3.9 REFUELING OPERATIONS

3.9.6 Refueling Canal Water Level

LCO 3.9.6 Refueling canal water level shall be maintained ≥ 156 ft Plant Datum.

APPLICABILITY: During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling canal water level not within limit.	A.1 Suspend movement of recently irradiated fuel assemblies within containment.	Immediately
	<u>AND</u>	
	A.2 Initiate action to restore refueling canal water level to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify refueling canal water level is ≥ 156 ft Plant Datum.	24 hours

4.0 DESIGN FEATURES

4.1 Site

The 4,738 acre site is characterized by a 4,400 foot minimum exclusion radius centered on the Reactor Building; isolation from nearby population centers; sound foundation for structures; an abundant supply of cooling water; an ample supply of emergency power; and favorable conditions of hydrology, geology, seismology, and meteorology.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 177 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy-4 or M5 fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases.

4.2.2 Control Rods

The reactor core shall contain 60 safety and regulating CONTROL ROD assemblies and 8 AXIAL POWER SHAPING ROD (APSR) assemblies. The material shall be silver indium cadmium or Inconel as approved by the NRC.

(continued)

4.0 DESIGN FEATURES

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.6 of the FSAR;

c. A nominal 9.11 inch center to center distance between fuel assemblies placed in the B pool;

d. A nominal 10.5 inch center to center distance between fuel assemblies placed in the A pool.

4.3.1.2 The new fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;

b. $k_{eff} \leq 0.95$ is fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.6 of the FSAR;

c. $k_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.6 of the FSAR; and

d. A nominal 21.125 inch center to center distance between fuel assemblies placed in the storage racks.

(continued)

4.0 DESIGN FEATURES

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 138 feet 4 inches.

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1474 fuel assemblies and six failed fuel containers.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The Plant General Manager shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

The Plant General Manager or his designee shall approve, prior to implementation, each proposed test, experiment or modifications to systems or equipment that affect nuclear safety.

5.1.2 The Control Room Supervisor shall be responsible for the control room command function. During any absence of the Control Room Supervisor from the control room while the unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the Control Room Supervisor from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions responsible for activities affecting safety of the nuclear power plant.

a. Lines of authority, responsibility, and communications shall be established and defined from the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of department responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These shall be documented in the FSAR;

b. The Vice President - Crystal River Nuclear Plant shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety. The Vice President - Crystal River Nuclear Plant shall be responsible for the overall safe operation of the plant and shall have control over those onsite activities necessary for the safe operation and maintenance of the plant; and

c. The individuals who train the operating staff, carry out health physics or perform quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. One auxiliary nuclear operator shall be assigned to the operating shift any time there is fuel in the reactor and

(continued)

5.3 Organization

5.2.2 Unit Staff (continued)

an additional auxiliary nuclear operator shall be assigned in MODES 1, 2, 3 and 4.

b. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

c. At least one licensed Reactor Operator (RO) shall be present in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3, or 4, at least one licensed Senior Reactor Operator (SRO) shall be present in the control room.

d. An individual qualified in Radiation Protection procedures shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1, 1971 for comparable positions, except for the Radiation Protection Manager, who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and the Shift Technical Advisor who shall have a Bachelor's degree, or the equivalent, in a scientific or engineering discipline with specific training in plant design and response and analysis of the plant transients and accidents.

5.0 ADMINISTRATIVE CONTROLS

5.4 Not Used

5.0 ADMINISTRATIVE CONTROLS

5.5 Not Used

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals

5.6.1 Procedures

5.6.1.1 Scope

Written procedures shall be established, implemented, and maintained covering the following activities:

a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;

b. Quality assurance for effluent and environmental monitoring;

c. Fire Protection Program implementation; and

d. All programs specified in Specification 5.6.2.

5.6.2 Programs and Manuals

The following programs shall be established, implemented, and maintained. Programs and Manuals may be titled as Reports.

5.6.2.1 Not Used

5.6.2.2 Not Used

5.6.2.3 Offsite Dose Calculation Manual (ODCM):

This Manual contains offsite dose calculation methodologies, the radioactive effluent controls program, and radiological environmental monitoring activities. The ODCM shall contain:

1. The methodologies and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents;

2. The methodologies and parameters used in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints;

3. The controls for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable in accordance with 10 CFR 50.36a. These include:

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.3 ODCM (continued)

a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination;

b. Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to ten times the concentration values of 10 CFR 20.1001 - 20.2401, Appendix B, Table II, Column 2;

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302;

d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas, conforming to 10 CFR 50, Appendix I;

e. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year at least every 31 days;

f. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of 31 days would exceed 2% of the guidelines for the annual dose or dose commitment, conforming to 10 CFR 50, Appendix I;

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the site boundary shall be limited to the following:

   1. For noble gases: Less than or equal to a dose rate of 500 mrems/yr to the total body and less than or equal to a dose rate of 3000 mrems/yr to the skin, and

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.3 ODCM (continued)

2. For Iodine-131, Iodine-133, tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to a dose rate of 1500 mrems/yr to any organ;

h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;

i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and

j. Limitations on the annual dose or dose commitment to any member of the public beyond the site boundary due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

Licensee Initiated Changes to the ODCM:

1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

   a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and

   b. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent dose, or setpoint calculations.

2. Shall become effective after review and acceptance by the on-site review function and the approval of the Plant General Manager; and

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.3 ODCM (continued)

3. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date, (e.g., month/year) the change was implemented.

5.6.2.4 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Low Pressure Injection, Reactor Building Spray and Makeup and Purification. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; and

b. Integrated leak test requirements for each system at refueling cycle intervals or less.

5.6.2.5 Component Cyclic or Transient Limit

This program provides controls to track the FSAR Table 4.8, cyclic and transient occurrences to ensure that components are maintained within the design limits.

5.6.2.6 Not Used

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.7 Not Used

5.6.2.8 Inservice Inspection Program

This program provides controls for inservice inspection of ASME Code Class 1, 2, 3, MC and CC components, including applicable supports. The program shall include the following:

a. Provisions that inservice inspection of ASME Code Class 1, 2, 3, MC and CC components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a;

b. The provisions of SR 3.0.2 are applicable to the frequencies for performing inservice inspection activities;

c. Inservice inspection of each reactor coolant pump flywheel shall be performed at least once every twenty years. The inservice inspection shall be either an ultrasonic examination of the volume from the inner bore of the flywheel to the circle of one-half the outer radius or a surface examination for exposed surfaces of the disassembled flywheels. The recommendations delineated in Regulatory Guide 1.14, Positions 3, 4, and 5 of Section C.4.b shall apply.

d. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any TS.

(continued)

5.6 Procedures, Programs and Manuals (continued)

5.6.2.9 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components, including applicable supports. The program shall include the following:

a. Provisions that inservice testing of ASME Code Class 1, 2, and 3 pumps, valves, and snubbers shall be performed in accordance with the ASME Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code) and applicable Addenda as required by 10 CFR 50.55a;

b. Testing frequencies specified in the ASME OM Code and applicable Addenda;

c. The provisions of SR 3.0.2 are applicable to the above required Frequencies and to other normal and accelerated Frequencies specified as two years or less in the Inservice Testing Program for performing inservice testing activities;

d. The provisions of SR 3.0.3 are applicable to inservice testing activities; and

e. Nothing in the ASME OM Code shall be construed to supersede the requirements of any TS.

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.10 Steam Generator (OTSG) Program

A Steam Generator Program shall be established and implemented to ensure that OTSG tube integrity is maintained. In addition, the Steam Generator Program shall include the following provisions:

a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an OTSG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the OTSG tubes are inspected or plugged to confirm that the performance criteria are being met.

b. Performance criteria for OTSG tube integrity. OTSG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

   1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down and all anticipated transients included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.10 OTSG Program (continued)

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than an OTSG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all OTSGs and leakage rate for an individual OTSG. Leakage is not to exceed one gallon per minute per OTSG.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.12, "RCS Operational LEAKAGE."

c. Provisions for OTSG tube repair criteria. A tube found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

d. Provisions for OTSG tube inspections. Periodic OTSG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that OTSG tube integrity is maintained until the next OTSG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each OTSG during the first refueling outage following OTSG replacement.

2. Inspect 100% of the tubes at sequential periods of 144, 108, 72, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the OTSGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.10 OTSG Program (continued)

of the period and the remaining 50% by the refueling outage nearest the end of the period. No OTSG shall operate for more than 72 effective full power months or three refueling outages (whichever is less) without being inspected.

3. If crack indications are found in any OTSG tube, then the next inspection for each OTSG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary to secondary LEAKAGE.

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5.6 Procedures, Programs and Manuals

5.6.2.11 Secondary Water Chemistry Program

This program provides controls for monitoring secondary water chemistry to inhibit steam generator tube degradation and low pressure turbine disc stress corrosion cracking. The program shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables;

b. Identification of the procedures used to measure the values of the critical variables;

c. Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in leakage;

d. Procedures for the recording and management of data;

e. Procedures defining corrective actions for all off control point chemistry conditions; and

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.6.2.12 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of the Control Room Emergency Ventilation System (CREVS) per the requirements specified in Regulatory Guide 1.52, Revision 2, 1978, and/or as specified herein, and in accordance with ANSI N510-1975 and ASTM D 3803-89 (Re-approved 1995).

a. Demonstrate for each train of the CREVS that an inplace test of the high efficiency particulate air (HEPA) filters shows a penetration < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, 1978, and in accordance with ANSI N510-1975 at the system flowrate of between 37,800 and 47,850 cfm.

b. Demonstrate for each train of the CREVS that an inplace test of the carbon adsorber shows a system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1975 at the system flowrate of between 37,800 and 47,850 cfm.

c. Demonstrate for each train of the CREVS that a laboratory test of a sample of the carbon adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, 1978, meets the laboratory testing criteria of ASTM D 3803-89 (Re-approved 1995) at a temperature of 30°C and relative humidity of 95% with methyl iodide penetration of less than 5.0%.

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.12 VFTP (continued)

d. Demonstrate for each train of CREVS that the pressure drop across the combined roughing filters, HEPA filters and the carbon adsorbers is $\leq \Delta P=4"$ water gauge when tested in accordance with Regulatory Guide 1.52, Revision 2, 1978, and ANSI N510-1975 at the system flowrate of between 37,800 and 47,850 cfm.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

5.6.2.13 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Radioactive Waste Disposal (WD) System, the quantity of radioactivity contained in gas storage tanks or fed into the offgas treatment system. The gaseous radioactivity quantities shall be determined following the methodology in Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or Failure". The liquid radwaste quantities shall be determined in accordance with Standard Review Plan, Section 15.7.3, "Postulated Radioactive Release due to Tank Failures".

The program shall include:

a. The limits for concentrations of hydrogen and oxygen in the Radioactive Waste Disposal (WD) System and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria, (i.e., whether or not the system is designed to withstand a hydrogen explosion).

b. A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank and fed into the offgas treatment system is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.14 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has the following properties within limits of ASTM D 975 for Grade No. 2-D fuel oil:

   1. Kinematic Viscosity,

   2. Water and Sediment,

   3. Flash Point,

   4. Specific Gravity API;

b. Other properties of ASTM D 975 for Grade No. 2-D fuel oil are within limits within 92 days following sampling and addition of new fuel to storage tanks.

c. Total particulate contamination of stored fuel oil is < 10 mg/L when tested once per 92 days in accordance with ASTM D 2276-91 (gravimetric method).

5.6.2.15 Not Used

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.16 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate limitations and remedial or compensatory actions may be identified to be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6.

The SFDP shall contain the following:

a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;

b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;

c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and

d. Other appropriate limitations and remedial or compensatory actions.

A loss of safety function exists when, assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to the system(s) supported by the inoperable support system is also inoperable); or

b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable; or

c. A required system redundant to the support system(s) for the supported systems (a) and (b) above is also inoperable.

(continued)

~~5.7~~ 5.6 Procedures, Programs and Manuals

5.6.2.16 SFDP (continued)

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.6.2.17 Technical Specifications (TS) Bases Control Program

Changes to the Bases of the TS shall be made under appropriate administrative controls and reviewed according to the review process specified in the Quality Assurance Plan.

Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

a. A change in the TS incorporated in the license; or

b. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

Proposed changes that meet the criteria of Specification 5.6.2.17.a or Specification 5.6.2.17.b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71.

5.6.2.18 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

SL 2.1.1.1	API Protective Limit
LCO 3.1.1	SHUTDOWN MARGIN
SR 3.1.7.1	API/RPI Position Indication Agreement
LCO 3.1.3	Moderator Temperature Coefficient (MTC)
LCO 3.2.1	Regulating Rod Insertion Limits
LCO 3.2.2	AXIAL POWER SHAPING ROD (APSR) Insertion Limits

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.18 COLR (continued)

LCO 3.2.3	AXIAL POWER IMBALANCE Operating Limits
LCO 3.2.4	QUADRANT POWER TILT
LCO 3.2.5	Power Peaking Factors
LCO 3.3.1	Reactor Protection System (RPS) Instrumentation
SR 3.4.1.1	Reactor Coolant System Pressure DNB Limits
SR 3.4.1.2	Reactor Coolant System Temperature DNB Limits
SR 3.4.1.3	Reactor Coolant System Flow DNB Limits
LCO 3.9.1	Boron Concentration

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC:

BAW-10179P-A, "Safety Criteria and Methodology for Acceptable Cycle Reload Analyses" (the approved revision at the time the reload analyses are performed) and License Amendment 144, SER dated June 25, 1992. The approved revision number for BAW-10179P-A shall be identified in the COLR.

ANP-2788P, "Crystal River 3 Rod Ejection Accident Methodology Report," Revision 0, and License Amendment 237 dated January 28 , 2010.

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling System (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.2.19 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

a. Other Applicable ITS:

3.4.3	RCS P/T Limits
3.4.11	Low Temperature Overpressure Protection

b. RCS pressure and temperature limits, including heatup and cooldown rates, criticality, and hydrostatic and leak test limits, shall be established and documented in the PTLR. The analytical methods used to determine the pressure and temperature limits including the heatup and cooldown rates shall be those previously reviewed and approved by the NRC in BAW-10046A, Rev. 2, "Methods of Compliance With Fracture Toughness and Operational Requirements of 10 CFR 50, Appendix G," June 1986. The analytical method used to determine vessel fluence shall be those reviewed by the NRC and documented in BAW-2241P, May 1997. The analytical method used to determine LTOP limits shall be those previously reviewed by the NRC based on ASME Code Case N-514. The Materials Program is in accordance with BAW-1543A, "Integrated Reactor Vessel Surveillance Program."

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.19 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) (continued)

c. The reactor vessel pressure and temperature limits, including those for heatup and cooldown rates, shall be determined so that all applicable limits (e.g., heatup limits, cooldown limits, and inservice leak and hydrostatic testing limits) of the analysis are met.

d. The PTLR, including revisions or supplements thereto, shall be provided upon issuance for each reactor vessel fluency period.

5.6.2.20 Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak Test Program," dated September 1995, as modified by the following exception:

1. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the November 7, 1991 Type A test shall be performed no later than November 6, 2006.

The peak calculated containment internal pressure for the design basis loss of coolant accident, Pa, is 54.2 psig. The containment design pressure is 55 psig.

The maximum allowable primary containment leakage rate, L_a, at P_a, shall be 0.25% of primary containment air weight per day.

Leakage Rate acceptance criteria are:

1. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq 0.60\ L_a$ for the Type B and Type C Tests and $\leq 0.75\ L_a$ for Type A Tests.

2. Air lock testing acceptance criteria are:

   a. Overall air lock leakage range is $\leq 0.05\ L_a$ when tested at $\geq P_a$.

   b. For each door, leakage rate is $\leq 0.01\ L_a$ when tested at $\geq$ 8.0 psig.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

(continued)

5.6 Procedures, Programs and Manuals

5.6.2.21 Control Complex Habitability Envelope Integrity Program

A Control Complex Habitability Envelope Integrity Program shall be established and implemented to ensure that CCHE habitability is maintained such that, with an OPERABLE Control Room Emergency Ventilation System (CREVS), CCHE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a challenge from smoke. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CCHE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements.

1. The definition of the CCHE and the CCHE boundary.
2. Requirements for maintaining the CCHE boundary in its design condition including configuration control and preventive maintenance.
3. Requirements for (i) determining the unfiltered air in-leakage past the CCHE boundary into the CCHE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CCHE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.
4. The Control Complex Habitability Envelope Integrity Program will be used to verify the integrity of the Control Complex boundary. Conditions that are identified to be adverse shall be trended and used as part of the 24 month assessment of the CCHE boundary.
5. The quantitative limits on unfiltered air in-leakage into the CCHE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air in-leakage measured by the testing described in paragraph 3. The unfiltered air in-leakage limit for radiological challenges is the in-leakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air in-leakage limits for hazardous chemicals and smoke must ensure that exposure of CCHE occupants to these hazards will be within the assumptions in the licensing basis.
6. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CCHE habitability, determining CCHE unfiltered in-leakage as required by paragraph 3.

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5.0 ADMINISTRATIVE CONTROLS

5.7 Reporting Requirements

5.7.1 Routine Reports

5.7.1.1 Reports required on an annual basis include:

a. Not Used

b. Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM).

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

c. Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted prior to May 1 of each year, and in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program, and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV B.1.

(continued)

5.7 Reporting Requirements

5.7.1.2 Not Used

5.7.2 Special Reports

Special Reports shall be submitted in accordance with 10 CFR 50.4 within the time period specified for each report.

The following Special Reports shall be submitted:

a. When a Special Report is required by Condition B or F of LCO 3.3.17, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

b. Any abnormal degradation of the containment structure found during the inspection performed in accordance with ITS 5.6.2.8 shall be reported to the NRC within 30 days of the current surveillance completion. The abnormal degradation shall be defined as findings such as delamination of the dome concrete, widespread corrosion of the liner plate, corrosion of prestressing elements (wires, strands, bars) or anchorage components extending to more than two tendons and group tendons force trends not meeting the requirements of 10CFR50.55a(b)(2)(ix)(B). The report shall include the description of degradation, operability determination, root cause determination and the corrective actions.

c. A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.6.2.10, Steam Generator (OTSG) Program. The report shall include:

    1. The scope of inspections performed on each OTSG,

    2. Active degradation mechanisms found,

    3. Nondestructive examination techniques utilized for each degradation mechanism,

    4. Location, orientation (if linear), and measured sizes (if available) of service induced indications,

(continued)

5.7 Reporting Requirements

5.7.2 Special Reports (continued)

5. Number of tubes plugged during the inspection outage for each active degradation mechanism,

6. Total number and percentage of tubes plugged to date,

7. The results of condition monitoring, including the results of tube pulls and in-situ testing.

5.0 ADMINISTRATIVE CONTROLS

5.8 High Radiation Area

5.8.1 Pursuant to 10 CFR 20, paragraph 20.1601(c), alternative methods are used to control access to high radiation areas. Each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation (measured at 30 cm) is > 100 mrem/hr but < 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP).

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

b. A radiation monitoring device that continuously integrates the radiation dose in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance.

5.8.2 In addition to the requirements of Specification 5.8.1, areas with radiation levels ≥ 1000 mrem/hr at 30 cm shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Control Room Supervisor or health physics supervision. Doors shall remain locked except during periods of access by personnel.

Direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

(continued)

5.8 High Radiation Area (continued)

5.8.3 For individual high radiation areas with radiation levels of > 1000 mrem/hr at 30 cm, accessible to personnel, that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, or that are not be continuously guarded, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.

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APPENDIX B - PART II

TO FACILITY OPERATING LICENSE NO. DPR-72

CRYSTAL RIVER UNIT 3

FLORIDA POWER CORPORATION

DOCKET NO. 50-302

ENVIRONMENTAL PROTECTION PLAN

(NON-RADIOLOGICAL)

TECHNICAL SPECIFICATIONS

1.0 Objectives of the Environmental Protection Plan

The Environmental Protection Plan (EPP) is to provide for protection of environmental values during operation and additional construction of the Crystal River Unit 3. The principal objectives of the EPP are as follows:

1. Verify that Crystal River Unit 3 is operated in an environmentally acceptable manner, as established by the Final Environmental Statement (FES) and other NRC environmental impact assessments.

2. Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.

3. Keep NRC informed of the environmental effects of Crystal River Unit 3 operation and additional construction, and of actions taken to control those effects.

Environmental concerns identified in the FES which relate to water quality matters are regulated by way of licensee's National Pollutant Discharge Elimination System (NPDES) Permit implemented by the State of Florida, Department of Environmental Protection (FDEP) through the Industrial Wastewater Facility Permit (hereafter referred to as the NPDES Permit).

2.0 Environmental Protection Issues

In the FES-Operating License, dated May 1973, NRC staff considered the environmental impacts associated with the operation of Crystal River Unit 3. Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment. The Appendix B Environmental Technical Specifications (ETS) issued with the license included discharge restrictions and monitoring programs to resolve the issues. Prior to issuance of this EPP, the requirements remaining in the ETS were:

1. The need to control the release of heat (temperature) and chlorine within those discharge concentrations evaluated.
2. The need for aquatic monitoring programs to confirm that thermal mixing occurs as predicted, and that effects on aquatic biota and water quality due to plant operation are no greater than predicted.
3. The need for special studies to document levels of intake entrainment and impingement.

Aquatic issues were addressed by the effluent limitations, monitoring requirements and the Section 316(b) demonstration requirement contained in the effective NPDES Permit formerly issued by the Environmental Protection Agency-Region IV. Note: The FDEP now issues the Industrial Wastewater Facility Permit under the NPDES.

3.0 Consistency Requirements

3.1 Crystal River Unit 3 Design and Operation

The licensee may make changes in station design or operation or perform tests or experiments affecting the environment provided such changes, tests or experiments do not involve an unreviewed environmental question. Changes in plant design or operation or performance of tests or experiments which do not affect the environment are not subject to this requirement.

Before engaging in unauthorized construction or operational activities which may affect the environment, the licensee shall perform an environmental evaluation of such activity.* When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activities and obtain prior approval from the NRC.

A proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the FES, supplements to the FES, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board; or (2) a significant change in effluents (in accordance with 10 CFR 51.22) or power level; or (3) a matter not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant adverse environmental impact.

The licensee shall maintain records of changes in facility design or operation and of tests and experiments carried out pursuant to this Subsection. These records shall include a written evaluation which provides bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question.

Records of modifications to plant structures, systems and components determined to potentially affect the continued protection of the environment shall be retained for the life of the plant. All other records, data and logs relating to this EPP

* Activities are excluded from this requirement if all measurable nonradiological effects are confined to the on-site areas previously disturbed during site preparation and construction.

(continued)

3.0 Consistency Requirements

3.1 Crystal River Unit 3 Design and Operation (continued)

shall be retained for five years or, where applicable, in accordance with the requirements of other agencies.

Activities governed by Section 3.3 of this EPP are not subject to the requirements of this section.

3.2 Reporting Related to the NPDES Permit

1. Violations of the NPDES Permit shall be reported to the NRC by submittal of copies of the reports required by the NPDES Permit.
2. The licensee shall provide the NRC with a copy of any 316(a) or (b) studies and/or related documentation at the same time it is submitted to the permitting agency.
3. Changes and additions to the NPDES Permit shall be reported to the NRC within 30 days following the date the change is approved. If a permit, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.
4. The NRC shall be notified of changes to the effective NPDES Permit proposed by the licensee by providing NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The licensee shall provide the NRC a copy of the application for renewal of the NPDES Permit at the same time the application is submitted to the permitting agency.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in Crystal River Unit 3 design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, or local environmental regulations are not subject to the requirements of Section 3.1.

4.0 Environmental Conditions

4.1 Significant Environmental Events

Any occurrence of a significant event that indicates or could result in significant environmental impact causally related to station operation shall be recorded and promptly reported to the NRC within 24 hours* followed by a written report within 30 days. No routine monitoring programs are required to implement this condition.

The written report shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection which also require reports to other Federal, State or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC shall be provided a copy of such report at the same time it is submitted to the other agency.

The following are examples of significant environmental events: excessive bird impaction events; onsite plant or animal disease outbreaks; mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973; unusual fish kills; and increase in nuisance organisms or conditions.

4.2 Endangered or Threatened Sea Turtles

Endangered or threatened sea turtles shall be protected in accordance with the Incidental Take Statement issued by the National Marine Fisheries Service (NMFS).

* If a significant environmental event occurs over weekends or holidays the report shall be supplied within 24 hours of the first working day following the weekend or holiday.

(continued)

4.0 Environmental Conditions

4.2.1 Incidental Take Statement

The NMFS has reviewed the impact of the Crystal River Energy Complex (CREC) operation on listed species of sea turtles and determined that CREC operations are not likely to result in jeopardy to the Kemp's ridley, green, loggerhead, leatherback, and hawksbill sea turtles. Numerical limits are established by NMFS on live takes, lethal takes causally related to plant operation, and lethal takes not related to plant operations.

4.2.2 NMFS Reasonable and Prudent Measures

In order to provide protection of sea turtles, the following reasonable and prudent measures are appropriate to minimize impacts to sea turtles:

a. Monitor sea turtle activities around the CREC bar racks and rescue sea turtles stranded on the bar racks, and

b. Keep records of sea turtle strandings.

4.2.3 NMFS Non-discretionary Terms and Conditions

The following non-discretionary terms and conditions implement the above reasonable and prudent measures:

a. Continue implementation of the approved Sea Turtle Rescue and Handling Guidelines. Subsequent revisions shall be submitted for review to NMFS and the Florida Fish and Wildlife Conservation Commission.

b. Report to the NMFS any injured or killed sea turtle in the intake canal or bar racks within 30 days of the incident.

c. Record all sea turtle takes by species, size and date. Verbal notifications and written reports must be provided to the NMFS as required by the Biological Opinion.